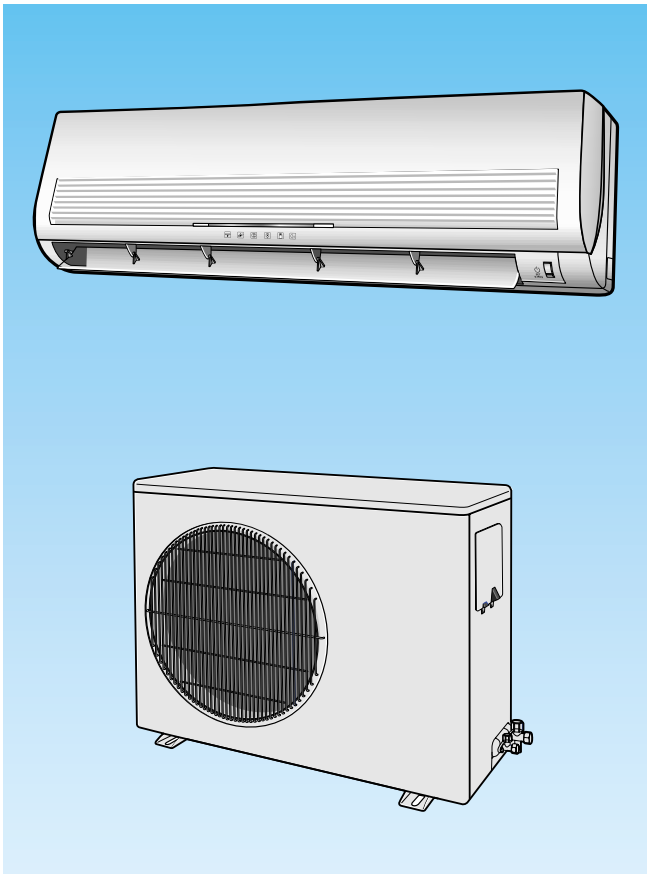
SAMSUNG

ROOM AIR CONDITIONER

INDOOR	OUTDOOR
AQA24C5(6)ME	UQA24C5(6)ME
SH24AC5(6)	SH24AC5(6)X
AQA18C9(0)ME	UQA18C9(0)ME
SH18AC9(0)	SH18AC9(0)X

SERVICE Manual

AIR CONDITIONER



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1. Precautions

1. Warning: Prior to repair, disconnect the power cord from the circuit breaker.

2. Use proper parts: Use only exact replacement parts. (Also, we recommend replacing parts rather than repairing them.)

3. Use the proper tools: Use the proper tools and test equipment, and know how to use them. Using defective tools or test equipment may cause problems later-intermittent contact, for example.

4. Power Cord: Prior to repair, check the power cord and replace it if necessary.

5. Avoid using an extension cord, and avoid tapping into a power cord. This practice may result in malfunction or fire.

6. After completing repairs and reassembly, check the insulation resistance.
   Procedure: Prior to applying power, measure the resistance between the power cord and the ground terminal. The resistance must be greater than 30 megaohms.

7. Make sure that the grounds are adequate.

8. Make sure that the installation conditions are satisfactory.
   Relocate the unit if necessary.

9. Keep children away from the unit while it is being repaired.

10. Be sure to clean the unit and its surrounding area.

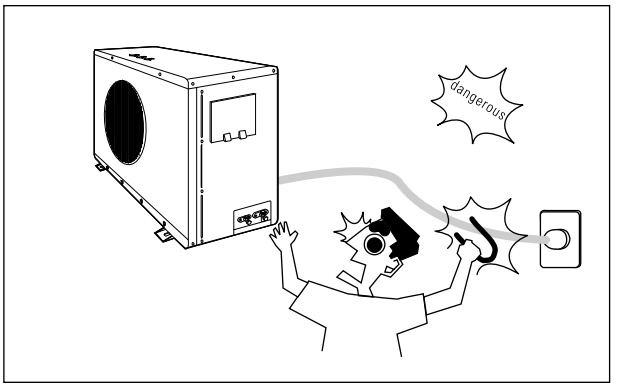

Fig. 1-1 Avoid Dangerous Contact

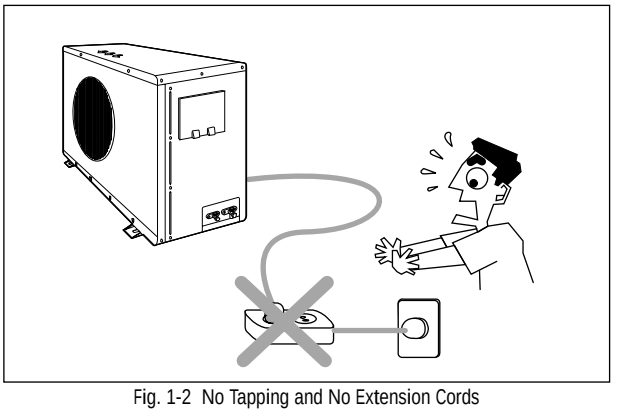
Fig. 1-2 No Tapping and No Extension Cords

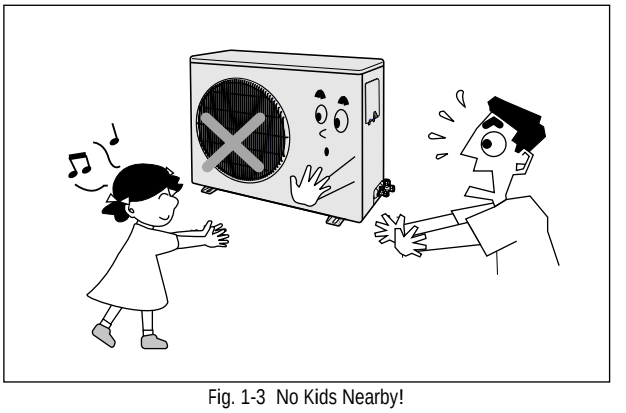
Fig. 1-3 No Kids Nearby!

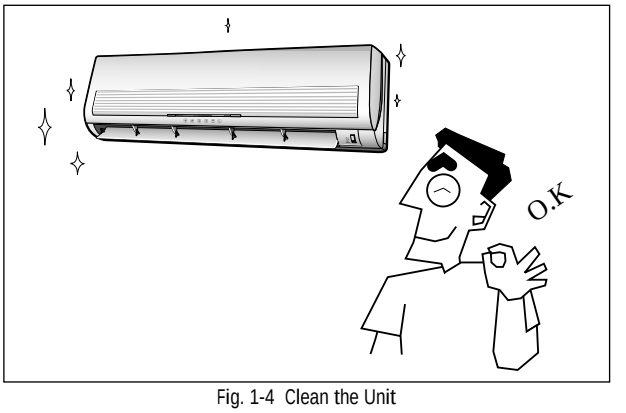

Fig. 1-4 Clean the Unit

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2. Product Specifications

2-1 Table

Item \ Model				SH24AC5(6)		SH18AC9(0)	
				Cool	Heat	Cool	Heat
Power Sourse				220-240V, 50Hz		220-240V, 50Hz	
Perfor-mance	Capacity		KW	6.80KW	6.90KW	5.30KW	5.60KW
	Air circulation (High)		m^3/min	14.0	15.0	12.7	14.0
	Moisture removal (High)		Liters/h	3.2		2.2	
	Available voltage range		V	198 ~ 264		198 ~ 264	
Electrical Rating	Running amperes		A	11.4	11.9	7.9	7.8
	Power input		kw	2.50	2.60	1.83	1.80
	Power factor		%	94.6	94.2	98.4	98.4
	Energy efficiency ratio		BTU/wh	2.72	2.65	2.90	3.11
	Compressor locked rotor amperes		A	54		52	
	Controls/Temperature control			Microprocessor / I.C Thermistor		Microprocessor / I.C Thermistor	
Features	Control unit			Wireless remote control		Wireless remote control	
	Timer			24-Hour ON or OFF		24-Hour ON or OFF	
	Fan speed		Indoor/Outdoor	3 Steps and Turbo / 2 Step		3 Steps and Turbo / 2 Step	
	Air flow direction (indoor)		Horizontal	Manual		Manual	
			Vertical	Auto		Auto	
	Comperssor			Rotary(Toshiba)		Rotary(Toshiba)	
	Refrigerant/Amount charged at rating		g	R410A / 1,650g		R410A / 1,400g	
	Refrigerant control			Capillary tube		Capillary tube	
	Operation sound	Indoor Hi/Mi/Lo	dB-A	49 / 47 / 45		46 / 44 / 42	
		Outdoor-Hi	dB-A	61		58	
	Refrigerant tubing connections			Flare type		Flare type	
	Max. allowable tubing length at shippint		m	20		15	
	Refrigerant tube diameter	Narrow tube	(in.)	6.35(1/4")		6.35(1/4")	
		Wide tube	(in.)	15.88(5/8")		12.7(1/2")	
	Refrigerant tube kit/Accessories			Optional / Hanger-plate		Optional / Hanger-plate	
Dimensions & Weight				Indoor unit	Outdoor	Indoor unit	Outdoor
	Unit dimensions	Height	mm	275	638	275	620
		Width	mm	1080	880	1080	787
		Depth	mm	204	310	204	320
	Package dimensions	Height	mm	372	719	372	692
		Width	mm	1153	1023	1153	909
		Depth	mm	272	413	272	444
	Weight	Net	kg	13	61.5	13	53.5
		Shipping	kg	16	65.5	16	57.0

Remarks : Rating Conditions are :
Indoor air temperature ISO(50Hz) : 27˚C DB/19.0˚C WB, ISO(60Hz) : 27.0˚C DB/19.5˚C WB
Outdoor air temperature ISO : 35.0˚C DB/24.0˚C WB

2-2 Major Component specifications

■ Indoor unit

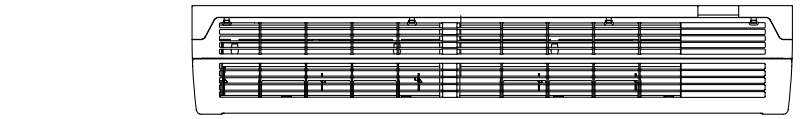
Model					SH24AC5(6)	SH18AC9(0)
PCB	Part No.				PD-SH30ZC-00/02	PD-SH30ZC-00/03
	Controls				Microprocessor	Microprocessor
	Control circuit fuse				250V, 3.15A	250V, 3.15A
Fan & Fan Motor	Type				Cross-Flow	Cross-Flow
	Dia. and length			mm	ø95/L = 842	ø95/L = 842
	Fan motor model				IC-9430SKC7A	IC-9430SKC7A
	Pols,rpm(at 240V)				4P, 1350 RPM	4P, 1350 RPM
	Normal out			W	40W	40W
	Coil resistance(Ambient temp.20˚C)			Ω	MAIN : 137Ω	MAIN : 137Ω
					SUB : 132Ω	SUB : 132Ω
	Safety devices	Type			17AM034A5	17AM034A5
		Operating temp.	Open	˚C	135 ± 5°C	135 ± 5°C
	Run capacitor			µF x VAC	2µF X 450VAC	2µF X 450VAC
S-Motor	Type					
	Model				MSFCC20A03	MSFCC20A03
	Rating				DC 12V	DC 12V
	Coil resistance (Ambient temp. 25˚C)			Ω	530Ω	530Ω
Heat Exch.	Coil				AL-FIN/Copper tube	AL-FIN/Copper tube
	Rows x Steps				2 x 15	2 x 15
	Fin pitch			mm	1.2	1.5
	Face area			m^2	0.265	0.265

■ Outdoor unit

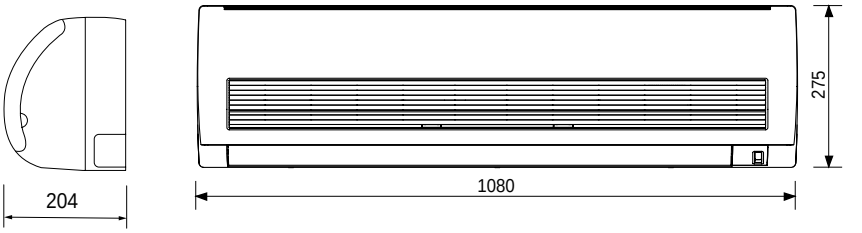
Model					SH24AC5(6)	SH18AC9(0)
Comp-ressor	Type				ROTARY	ROTARY
	Compressor model				PA290X3F-4MSE	PA225X3F-4MSE
	Normal output			W	2570	1950
	Comperssor oil kind				RB68AF	RB68AF
	Comperssor oil			cc	1400	1200
	Oil Specific gravity				-	-
	Coil resistance(Ambient temp.25˚C)			Ω	Start winding : 2.20	Start winding : 2.68
					Run winding : 1.07	Run winding : 1.35
	Safety devices	Type			UP2TF7225-141	UP3SE0391-T39
		Overloal relay			Internal Line Break	Internal Line Break
		Operating temp.	Open	˚C	165	160
			Close	˚C	95	90
		Operating amp(Ambient temp.)			-	-
	Run capacitor			µF x VAC	45µF X 450VAC	45µF X 450VAC
Fan & Fan	Type				Propeller	Propeller
	Dia. and length			mm	ø460	ø405
	Fan motor model				OSME-906SRC	AMASS-030AVEB
	Pols, rpm(at240V)				6P, 850/400 RPM	4P, 920RPM
	Normal output			W	70W	35W
	Coil resistance(Ambient temp.20˚C)			Ω	-	-
					-	-
	Safety devices	Type			17AM037A5	17AM037A5
		Operating temp.	Open	˚C	150±5°C	150±5°C
			Close	˚C		
	Run capacitor			µF x VAC	4µF x 450VAC	2.5µF x 450VAC
Heat Exch.	Coil				AL-FIN / Copper tube	AL-FIN / Copper tube
	Rows x Steps				2 x 28	2 x 28
	Fin pitch			mm	1.5	1.5
	Face area			m^2	0.538	0.500

2-3 Dimensions

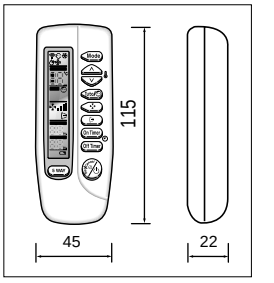
2-3-1 Indoor Unit



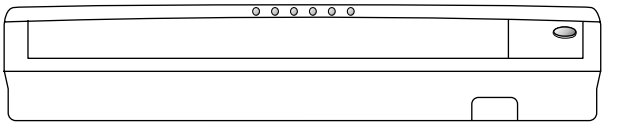
(Front view)

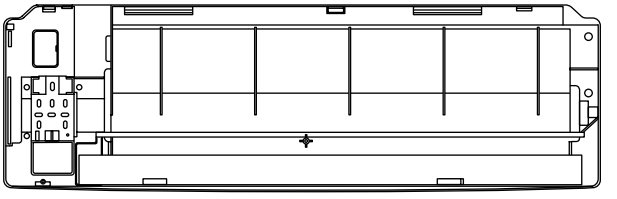


(Remote control)

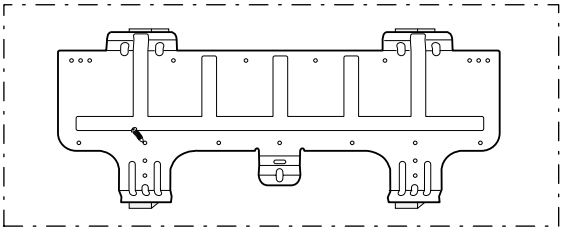


(Rear view)





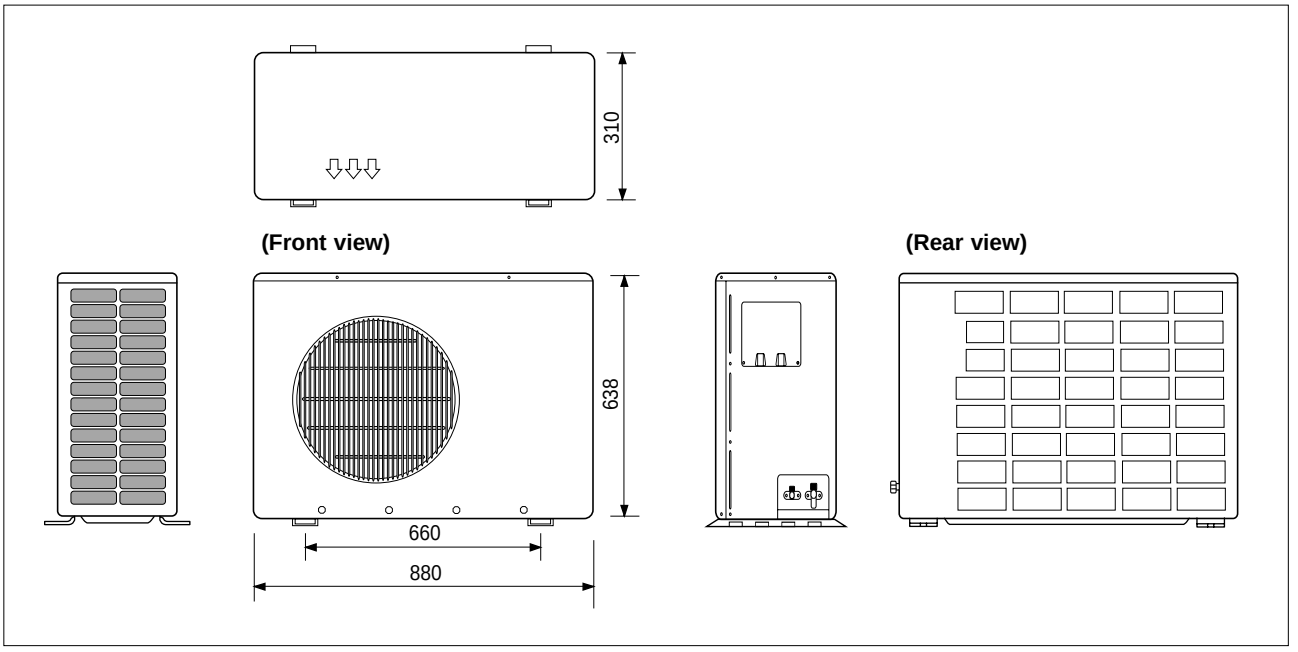
Installation plate



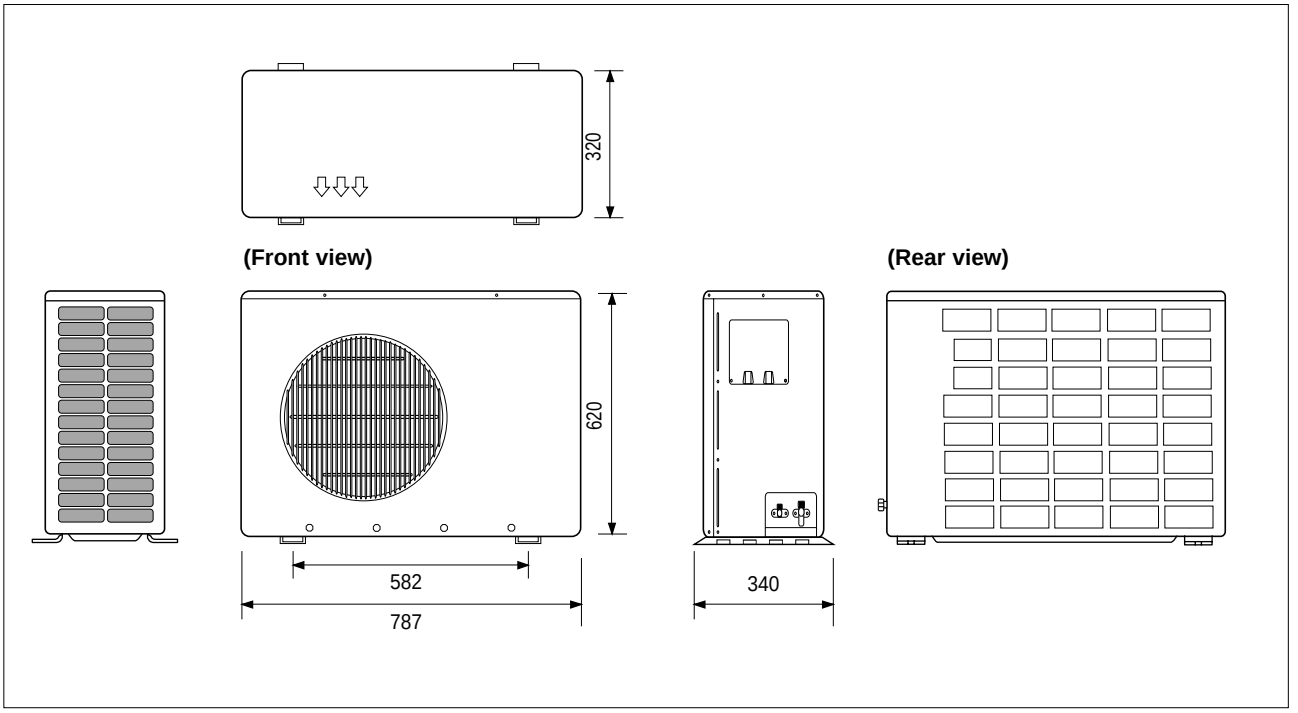
✻The feature is subject to be varied as a model.

2-3-2 Outdoor Unit

■ 24K BTU

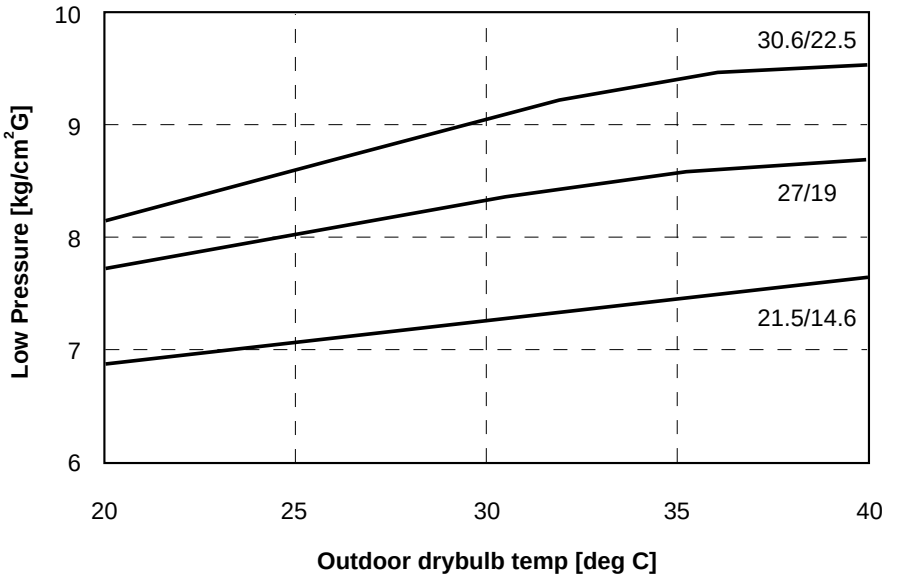


■ 18K BTU

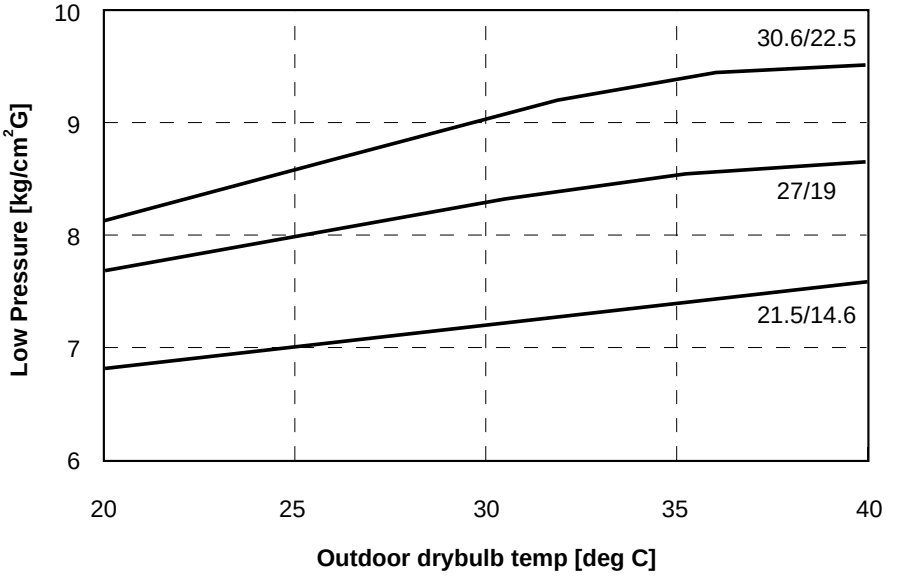


2-4 Pressure Graph

■ 24K BTU



■ 18 BTU



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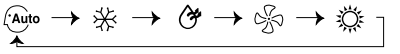
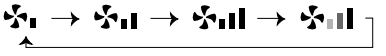
3. Operating Instructions and Installation

3-1 Operating Instructions

3-1-1 The Feature of Key in remote controller

NO	NAMED OF KEY	FUNCTION OF KEY
1		Power On/Off button to start and stop airconditioner or timer set up.
2	(UP)	Temp. up button. To increase the temperatute by the pressing the temperature button.
	(DOWN)	Temp. down button. To decrease the temperature by the pressing the temperature button.
3		Each time you press this button Mode is changed in the following order  : Auto Mode : Fan Only : Cool Mode : Heat Mode : Dry Mode
4		Press TURBO until the appearance. the air condition cools or heats the room as quickly as possible. after 30minutes, the air, the airconditioner is reset automatically to the previous mode.
		Press until the appearance. the sleep timer can be used when you are cooling or heating your room to switch the air conditioner off automatically after a perriod of six hours.
5		Each time you press this button, FAN SPEED is changed in the following order. 
6		Adjust air flow vertically.
7		The ON Timer enables you to **switch on** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel, press the (Set/Cancel) button.
8		The Off Timer enables you to **switch off** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel, press the (Set/Cancel) button.
9		To select the 5 way function with the remote control, press the 5 way button one or more times until the desired mode is selected. Each time you press the 5 way button Each 5 way indicator on the indoor unit comes on in order.

3-1-2 Name & Function of Key in remote controller

1. AUTO MODE : In this mode, operation mode(COOL, HEAT) is selected automatically by the room temperature of initial operation.

Room Temp	Operation Type
Tr≥ 21°C+ΔT	Cool Operation (Set Temp:24°C+ΔT)
21°C +ΔT>Tr	Heat Operation (Set Temp : 22°C+ΔT)

   ΔT= -1°C, -2°C, 0°C+1°C+2°C
   ΔT is controlled by setting temperature up/down key of remote controller

2. COOL MODE : The unit operates according to the difference between the setting and room temperature. (18°C~30°C)

3. HEAT MODE : The unit operates according to the difference between the setting and room temperature.(16°C~30°C)
   *Prevention against cold wind : For about 3~5 minutes after initial operation, thermo control or "de-ice", the indoor fan will either not operate or operate very slowly, then switch to the selected fan speed. This period is to allow the indoor unit's heat-exchanger to prewarm before emitting warm air.
   *High temperature release function : The outdoor unit for and compressor ON/OFF control for safety operation, when the overheat is heat exchanger of indoor unit.
   *De-ice : Deicing operation is controlled by indoor unit's heat exchanger temperature and accumulating time of compressor's operation.
   De-ice end by sensing of the processing time by de-ice Condition.

4. DRY MODE : Has 3 states, each determined by room temperature.
   The unit operates in DRY mode.
   *Compressor ON/OFF Time is controlled compulsorily(can not set up the fan speed, always breeze).
   *Protective function : Low temperature release. (Prevention against freeze)

5. TURBO MODE : This mode is available in AUTO, COOL, HEAT, DRY, FAN MODE.
   When this button is pressed at first, the air conditioner is operated "powerful" state for 30 minutes regardless of the set temperature, room temperature.
   When this button is pressed again, or when the operating time is 30 minutes, turbo operation mode is canceled and returned to the previous mode.
   *But, if you press the TURBO button in DRY or FAN mode that is changed with AUTO mode automatically.

6. SLEEP MODE : Sleep mode is available only in COOL or HEAT mode.
   The operation will stop after 6 hours.
   *In COOL mode : The setting temperature is automatically raised by 1°C each 1hour When the temperature has been raised by total of 2°C, that temperature is maintained.
   *In HEAT mode : The setting temperature is automatically droped by 1°C each 1hour. When the temperature has been droped by total of 2°C, that temperature is maintained.

7. FAN SPEED : Manual (3 step), Auto (4 step)
   Fan speed automatically varies depending on both the difference between setting and the room temperature.

8. COMPULSORY OPERATION :
   For operating the air conditioner without the remote controller.
   *AUTO : The operating is the same function that AUTO MODE in the remote controller. And each time you press the button the 5WAY func-tion is changed as follow.
   STD → NATURE → POWER → SAVING → SILENCE → POWER OFF
   ❊ STD(standard)( ) : General operation Mode
   ❊ NATURE( ) : The unit is operated according to health pattern control
   ❊ POWER( ) : The unit is operated in powerful state
   ❊ SAVING( ) : The unit is operated in power saving state
   ❊ SILENCE( ) : The unit is operated quitely
   Each mode has Auto, Cool and SLEEP operation designed in advarce.

9. SWING : BLADE-H is rotated vertically by the stepping motor.
   *Swing Set : Press the button under the remote control is displayed on LCD the and the blades move up and down. If the one more time press the button, blades location is stop.

10. 24-Hour ON/OFF Real Setting Timer. : The air conditioner is turned ON at a specified time using .
    OFF TIMER : The air Conditioner is turned OFF at a specified time using .
    *ON TIMER : Only timer LED lights on.
    *OFF TIMER : Both timer and operation LED lights on.

11. SELF Diagnosis

Check Point	LED DISPLAY					
	TIMER	STD	NATURE	POWER	SAVING	SILENCE
Indoor unit room temperature sensor error(open or short)	◑	○	○	○	○	○
Indoor unit heat exchanger temperature sensor error(open or short)	◑	◑	○	○	○	○
Indoor fan mal function	○	○	◑	○	○	○
EEPROM error	◑	◑	◑	○	○	○
Option error(option wasn't set up or option data error)	◑	◑	◑	◑	◑	◑

◑ : LED blinking ○ : LED off

12. BUZZER SOUND : Whenever the ON/OFF button is pressed or whenever change occurs to the condition which is set up or select, the compulsory operation mode, buzzer is sounded "beep".

3-2 Installation

3-2-1 Selecting Area for Installation

Select an area for installation that is suitable to the customer's needs.

3-2-1(a) Indoor Unit

1. Make sure that you install the indoor unit in an area providing good ventilation. It must not be blocked by an obstacle affecting the airflow near the air inlet and the air outlet.
2. Make sure that you install the indoor unit in an area allowing good air handling and endurance of vibration of the indoor unit.
3. Make sure that you install the indoor unit in an area where there is no source of heat or vapor nearby.
4. Make sure that you install the indoor unit in an area from which hot or cool air is spread evenly in a room.
5. Make sure that you install the indoor unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter).
6. Make sure that you install the indoor unit in an area which provides easy pipe connection with the outdoor unit, and easy drainage for condensed water.
7. Make sure that you install the indoor unit in an area which is large enough to accomodate the measurements shown in figure on the next page.

3-2-1(b) Outdoor Unit

1. Make sure that you install the outdoor unit in area not exposed to the rain or direct sun light.
   (Install a separate sunblind if exposed to direct sun light.)
2. Make sure that you install the outdoor unit in area allowing good air moment, not amplifying noise or vibration, especially to avoid disturbing neighbours.
   (Fix the unit firmly if it is mounted in a high place.)
3. Make sure that you install the outdoor unit in area providing good ventilation and which is not dusty. It must not be blocked by any obstacle affecting the airflow near the air inlet and the air outlet.
4. Make sure that you install the outdoor unit in area free from animals or plants.
5. Make sure that you install the outdoor unit in area not blocking the traffic.
6. Make sure that you install the outdoor unit in area easy to drain condensed water from the indoor unit.
7. Make sure that you install the outdoor unit in area which provides easy connection within the maximum allowable length of a coolant pipe(18✻✻: 15meters, 24✻✻: 20meters).

Note

1. Add (18✻✻:30g, 24✻✻:40g) of refrigerant (R410A) for every 1 meter if the pipe length exceeds the standard pipe length of 5 meters.
2. Maintain a height between the indoor and outdoor units of less than 8 meters.

8. Make sure that you install the outdoor unit in an area which is large enough to accommodate the measurements shown in figure on the next page.

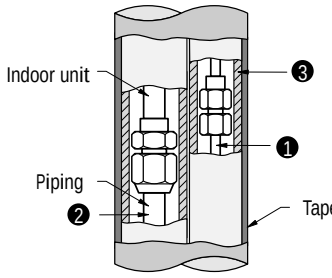
3-2-1(c) Remote Control Unit

1. Make sure that you install the remote control unit in an area free from obstacles such as curtains etc, which may block signals from the remote control unit.
2. Make sure that you install the remote control unit in an area not exposed to direct sunlight, and where there is no source of heat.
3. Make sure that you install the remote control unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter).

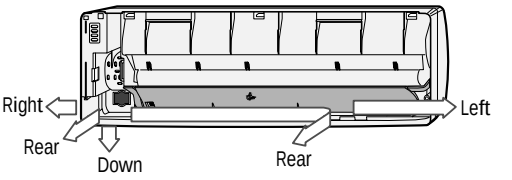
Caution :
It is harmful to the air conditioner if it is used in the following environments: greasy areas (including areas near machines), salty areas such as coast areas, areas where sulfuric gas is present such as hot spring areas. Contact your dealer for advice.

3-2-2 Installation diagram of indoor unit and outdoor unit

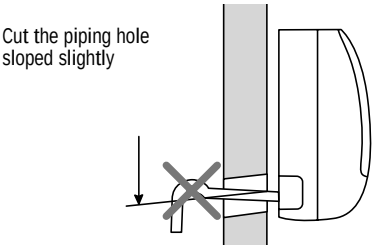
A Indoor unit gas leak test check point

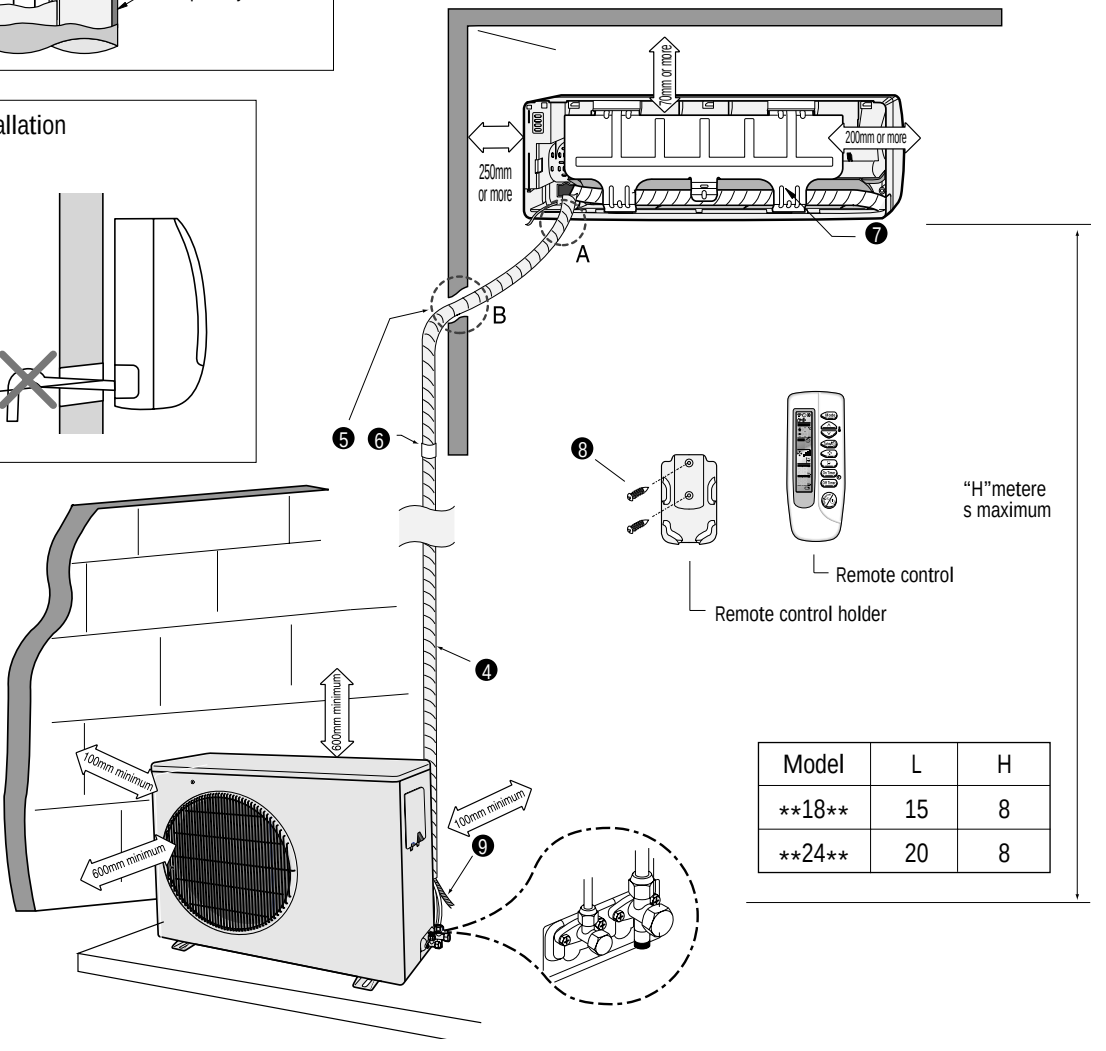


Piping may be laid to the rear, left, right or down .



B Drain hose installation

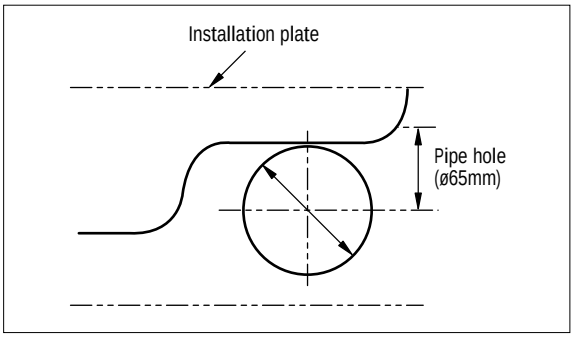




Model	L	H
18	15	8
24	20	8

❶	Piping (Liquid) 1/4"		❺	Putty
❷	18K BTU	Piping(Gas) 1/2"	❻	Clamper tube
	24K BTU	Piping(Gas) 5/8"	❼	Installation plate
❸	Installation tube		❽	Screw
❹	Vinyl tape		❾	Drain hose

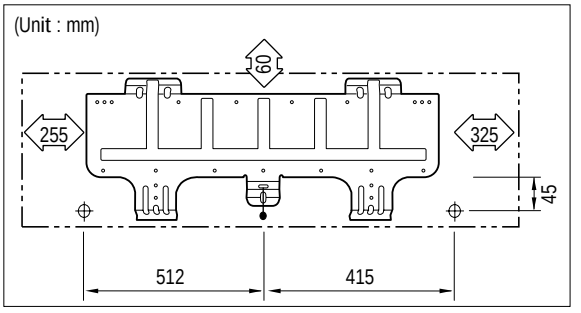
3-2-2(a) Fixing the Installation Plate



1. Determine the position of the pipe and drain hose hole using the right figure and drill the hole with an inner diameter of 65mm so that it slants slightly downwards.

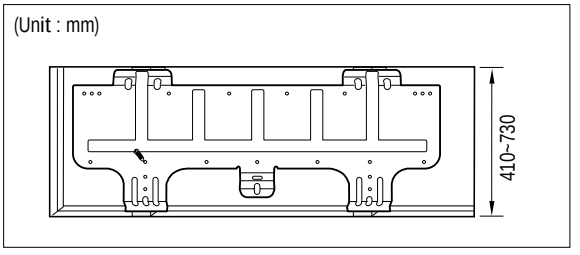
2. **If you are fixing the indoor unit to a… Then follow Steps…**

Wall	**3.**
Window frame	**4 to 6.**



3. Fix the installation plate to the wall in a manner appropriate to the weight of the indoor unit.

   If you are mounting the plate on a concrete wall with anchor bolts, the anchor bolts must not project by more than 20mm.

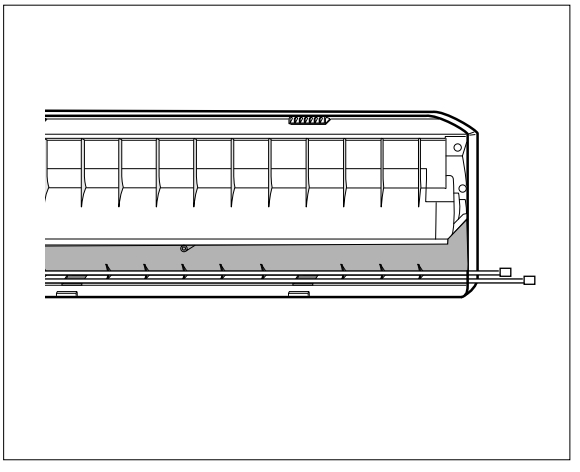


4. Determine the positions of the wooden uprights to be attached to the window frame.

5. Attach the wooden uprights to the window frame in a manner appropriate to the weight of the indoor unit.

6. Using tapped screws, attach the installation plate to the wooden uprights, as illustrated in the last figure opposite.

3-2-2(b) Purging the Unit



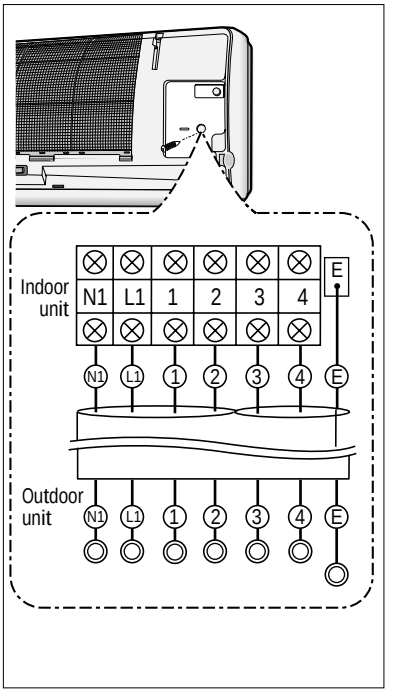
On delivery, the indoor unit is loaded with an inert gas. All this gas must therefore be purged before connecting the assembly piping. To purge the inert gas, proceed as follows.

Unscrew the caps at the end of each pipe.

Result : All inert gas escapes from the indoor unit.

- **To prevent dirt or foreign objects from getting into the pipes during installation, do NOT remove the caps completely until you are ready to connect the piping.**

3-2-2(c) Connecting the Assembly Cable.

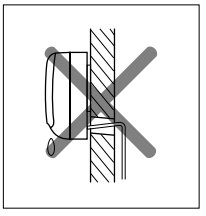


The indoor unit is powered from the outdoor unit via the assembly cable. If the outdoor unit is more than five metres away from the indoor unit, the cable must first be extended to a maximum of 15 metres.

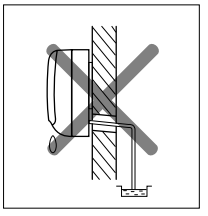
1. Extend the assembly cable if necessary.
2. Open the front grille by pulling on the tabs on the lower right and left sides of the indoor unit.
3. Remove the screw securing the connector cover.
4. Pass the assembly cable through the rear of the indoor unit and connect the assembly cable to terminals N1, L1, 1, 2, 3, 4.
   - Each wire is labelled with the corresponding terminal number.
5. Firmly fix the ass'y cable with clamp wire holder.
6. Pass the other end of the cable through the 65mm hole in the wall.
7. Replace the connector cover, carefully tightening the screw.
8. Close the front grille.
9. For further details on how to plug the other end of the assembly cable into the outdoor unit, refer to page 3-8.

3-2-2(d) Installing and Connecting the Indoor Unit Drain Hose

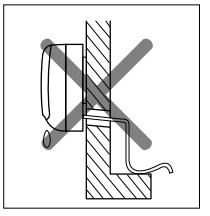
Care must be taken when installing the drain hose for the indoor unit to ensure that any condensation water is correctly drained outside. When passing the drain hose through the 65mm hole drilled in the wall, check that none of the following situations occur.



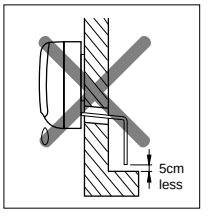
The hose must NOT slope upwards.



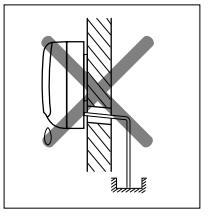
The end of the drain hose must NOT be placed in water.



Do NOT bend the hose in different directions.



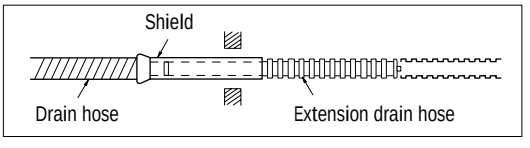
Keep a clearance of at least 5cm between the end of the hose and the ground.



Do NOT place the end of the drain hose in a hollow.

To install the drain hose, proceed as follows.

1. If necessary, connect the 2-metre extension to the drain hose.
2. If you are using the extension, insulate the inside part of the extension drain hose with a shield.
3. Pass the drain hose under the refrigerant piping, taking care to keep the drain hose tight.
4. Pass the drain hose through the hole in the wall, making sure that it is sloping downwards, as shown in the illustrations above.

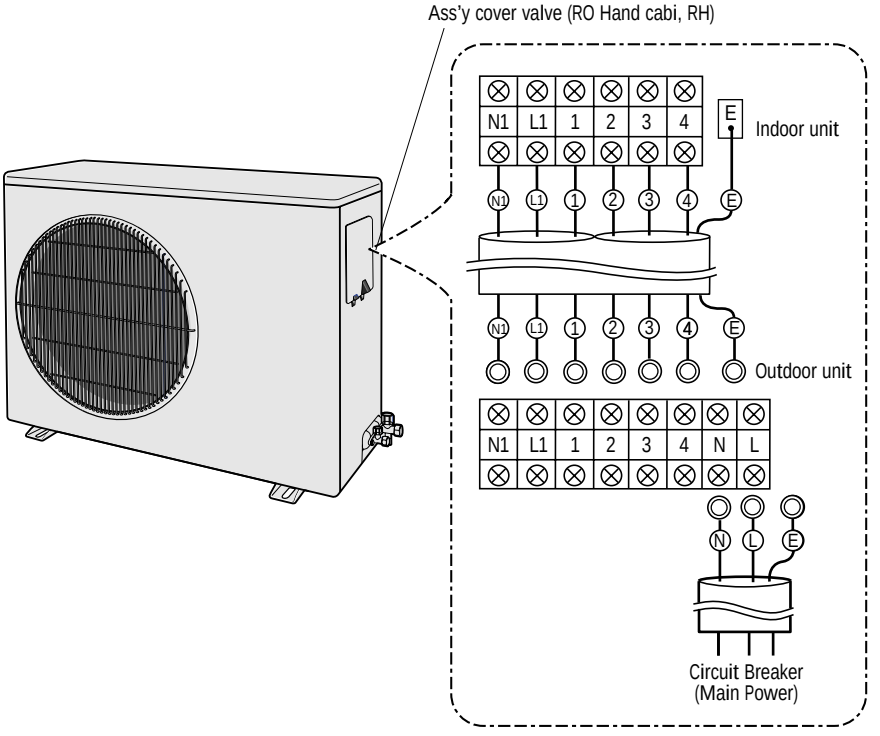


The hose will be fixed permanently into position once the whole installation has been tested for gas leaks;

3-2-2(e) Outdoor unit installation

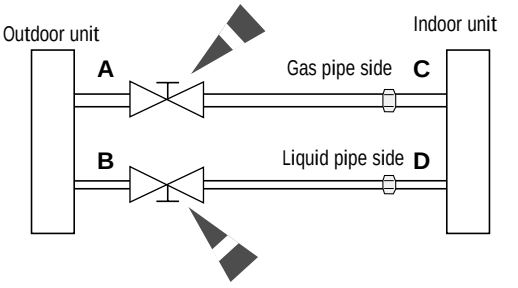
Wiring connection

1. Remove the cover-E parts.
2. Firmly connect the cable connector in the terminal block.
3. Fasten the M4 ring terminal to the hole marked
4. Firmly fix the ass'y cable with clamp wire holder.
5. Assemble the cover-E parts.
6. To prevent the entry of water, form a trap of the ass'y cable as illustrated in the installation diagram of indoor and outdoor unit.



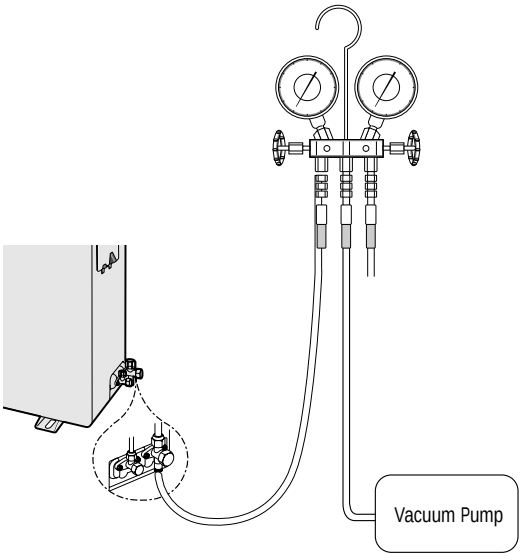
3-2-2(f) Air-Purge Procedure

1. Connect each assembly pipe to the appropriate valve on the outdoor unit and tighten the flare nut.



2. Connect the charging hose of low pressure side of manifold gauge to the packed valve having a service port (1/2” or 5/8” Packed valve) as shown at the figure.

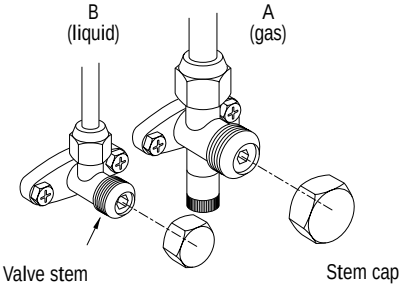
3. Open the valve of the low pressure side of manifold gauge counter-clockwise.



4. Purge the air from the system using vacuum pump for about 30 minutes.
   - After that, please recheck that pressure is staloilization.
   - Close the valve of the low pressure side of manifold gauge clockwise.
   - Remove the hose of the low pressure side of manifold gauge.

5. Set valve cork of both liquid side and gas side of packed valve to the open position.

6. Mount the valve stem nuts to the 2-way and 3-way valve. And mount the service port cap to 3-way valve.

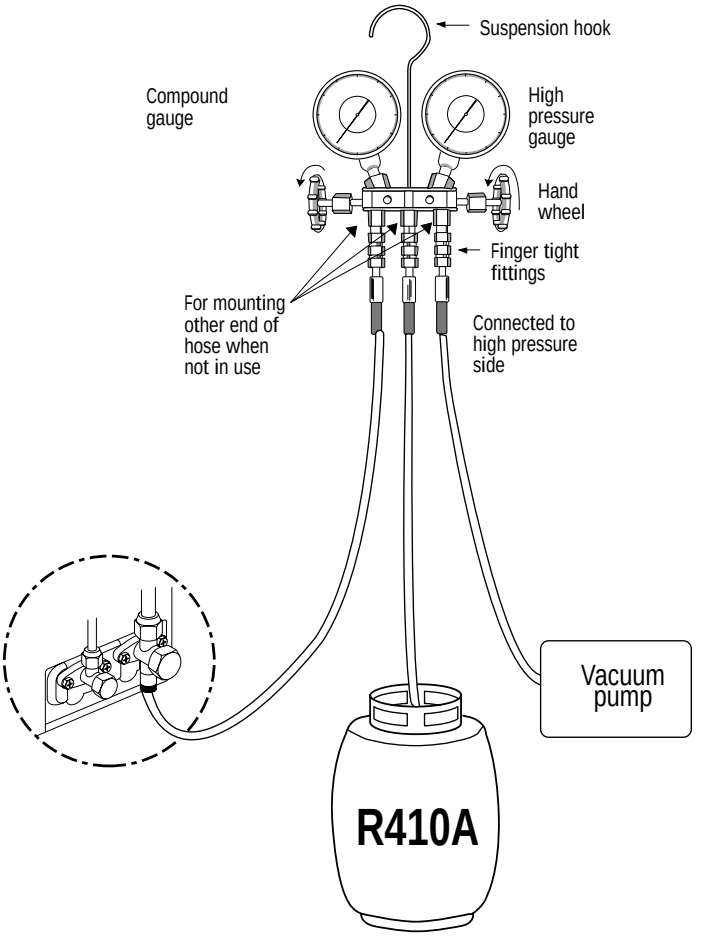


7. Check for gas leakage.
   - At this time, especially check for gas leakage from the 3-way valve’s stem nuts, and from the service port cap.

3-2-2(g) Refrigerant Refill

• Refill an air-conditioner with refrigerant when refrigerant has been leaked at installing or using.

1. Vacuum system with pump (for new installation, leakage).
↓
2. Turn the 3-way valve clockwise to close, connect the pressure gauge(low pressure side) to the service valve, and open the 3-way valve again.
↓
3. Connect the tank to refill with Refrigerant
↓
4. Set the unit to Low pressure checking mode.
   * Press the ON/OFF switch for 5 second.
   * All lamps blink on the indoor unit.
↓
5. Check the pressure indicated by the pressure gauge(low pressure side).
   * Refer to Low pressure graph.
↓
6. Open the refrigerant tank and fill with refrigerant until the rated pressure is reached.
   * It is recommended not to pour the refrigerant in too quickly, but gradually while operating a pressure valve.
↓
7. Stop operation of the air conditioner.
↓
8. Close the 3-way valve, disconnect the pressure gauge, and open the 3-way valve again.
↓
9. Close the cap of each valve.



3-2-2(h) Refrigerant Adjustment

Class	For installation		For service	
Connection Pipe Length	Air-Purge Method	Refrigerant Adjustment	Air-Purge Method	Refrigerant Quantity
5m Max.	Refer to the detailed Air-Purge Procedure	Unnecessary	Purge air using a vaccum pump	refer to specification sheet
5~10m		Add "A" of refrigerant R410A(Add as liquid state) for every 1m.		Add "A" of refrigerant R410A(Add as liquid state) for every 1m.

MODEL	"A"
SH18AC9(0)(X)	30g
SH24AC5(6)(X)	40g

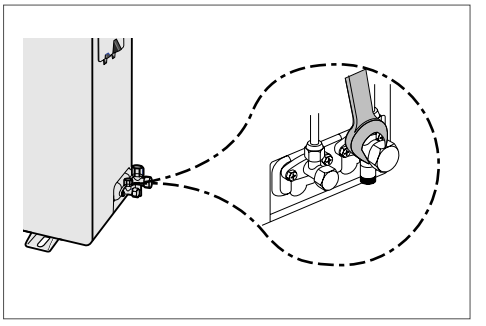
3-2-2(i) Flare nut fixing torque

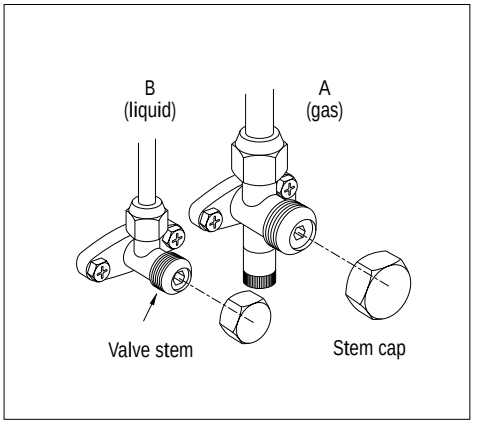
Outter diameter	Torque (kg-cm)	
	Fixing Torque	Final Torque
ø 6.35 (9000Btu, 12000Btu) (Liquid Side)	160	200
ø 9.52 (9000Btu) (Gas Side)	300	350
ø 12.7 (12000Btu) (Gas Side)	500	550

3-2-2(j) "Pump down" Procedure

- Pump down shall be carried out when an evaporator is replaced or when the unit is relocated in another area.

1. Remove the caps from the 2-way valve and the 3-way valve.
2. Turn the 3-way valve clockwise to close and connect a pressure gauge(low pressure side) to the service valve, and open the 3-way valve again.
3. Set the unit to cool operation mode. (Check if the compressor is operating.)
4. Turn the 2-way valve clockwise to close.
5. When the pressure gauge indicates "0" turn the 3-way valve clockwise to close.
6. Stop operation of the air conditioner.
7. Close the cap of each valve.





Relocation of the air conditioner

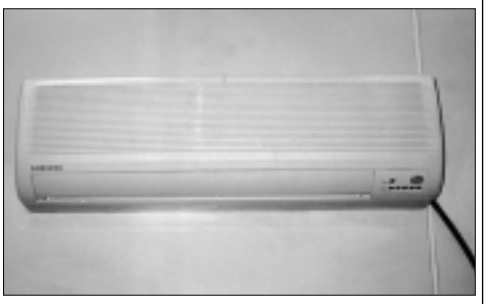
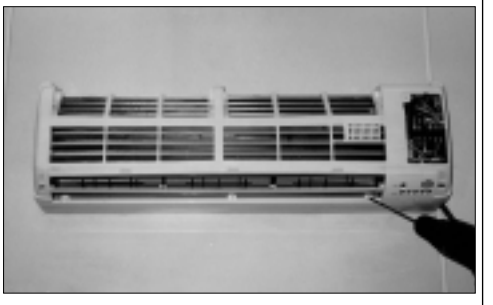
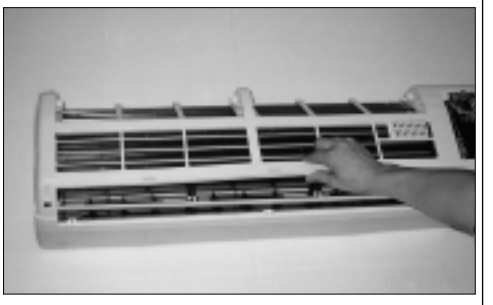
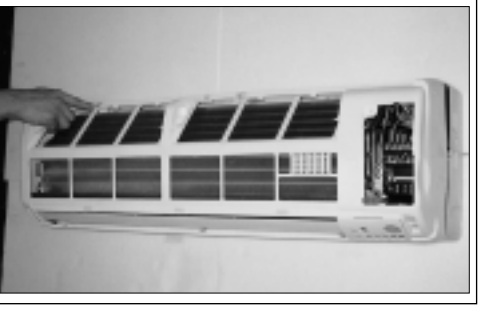
- Refer to this procedure when the unit is relocated.

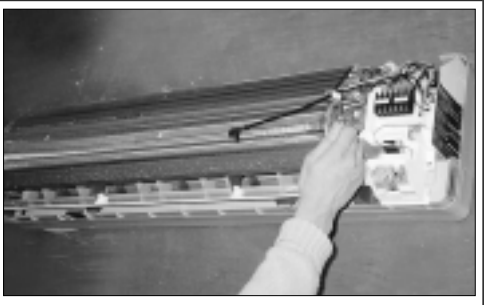
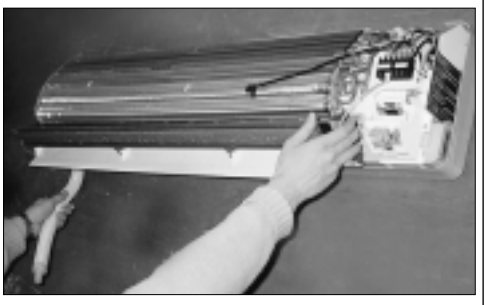
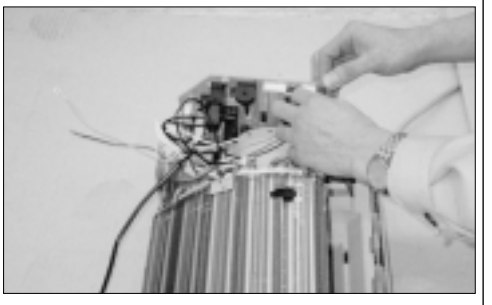
1. Carry out the pump down procedure (refer to the details of 'pump down').
2. Remove the power cord.
3. Disconnect the assembly cable from the indoor and outdoor units.
4. Remove the flare nut connecting the indoor unit and the pipe.
   At this time, cover the pipe of the indoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
5. Disconnect the pipe connected to the outdoor unit.
   At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
6. Make sure you do not bend the connection pipes in the middle and store together with the cables.
7. Move the indoor and outdoor units to a new locatioon.
8. Remove the mounting plate for the indoor unit and move it to a new location.

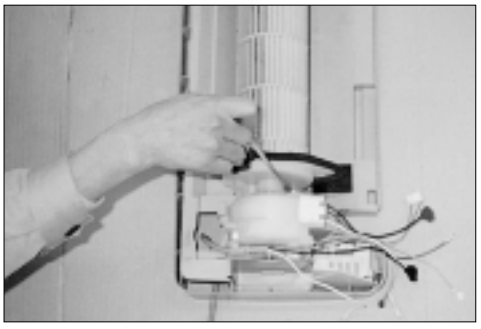
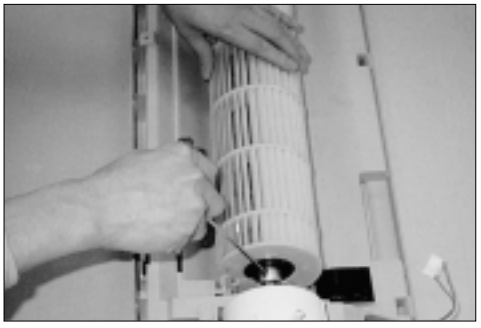
4. Disassembly and Reassembly

Stop operation of the air conditioner and remove the power cord before repairing the unit.

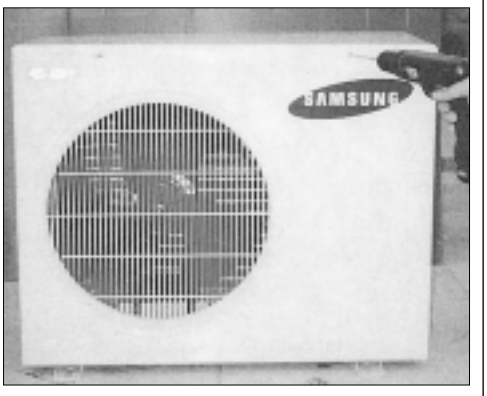
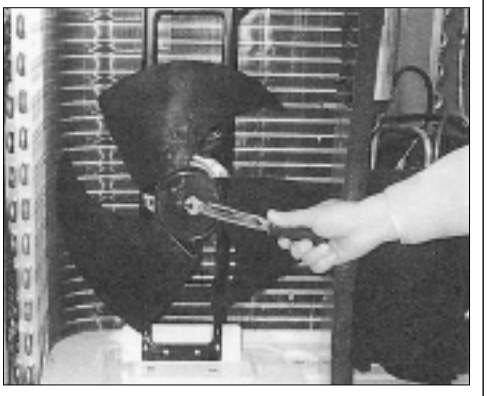
4-1 Indoor Unit

No	Parts	Procedure	Remark
1	Front Grille	1) Stop the air conditioner operation and block the main power. 2) Seperate tape of front panel upper.	
		3) Contract the second finger to the left, and right handle and pull to open the inlet grille. 4) Take the left and right filter out. * Take the Deodorizing and Electrostatic filter out. (Optional) 5) Loosen one of the right fixing screw and seperate the terminal cover. 6) Loosen three fixing screws of front grille.	
			
		7) Pull the upper left, right and Center of discharge softly for the outside cover to be pulled out.	
		8) Pull softly the lower part of discharge and push it up. **Caution;** Assemble the front panel and fix the hooks of left, right and Center.	

No	Parts	Procedure	Remark
2	Ass'y Tray Drain.	1) Do "1", above. Separate the drain hose from the extension drain hose. 2) Take the display PCB out. (Right of indoor unit) 3) Pull tray drain out from the back body.	 
3	Electrical Parts (Main PCB)	1) Do "1", "2", above. 2) Take all the connector of PCB upper side out. (Inclusion Earth Wire) 3) Separate the outdoor unit connection wire from the terminal block. 4) If pulling the Main PCB up. it will be taken out.	
4	Heat Exchanger	1) Do "1" and "2", "3", above. 2) Loosen two fixing earth screws of right side. 3) Separate the connection pipe. 4) Separate the bush body at the upper side and holder at the rearside. 5) Loosen the two fixing screws of left side. 6) Lifting the heat exchanger up a little to push the up side for separation from the indoor unit.	

No	Parts	Procedure	Remark
5	Fan Motor and Cross Fan	1) Do “1” “2” ”3” “4”, above. 2) Loosen the fixing three screws and separate the motor holder. 3) Loosen the fixing screw of fan motor. (By use of M3 wrench) 4) Separate the fan motor from the fan. 5) Separate the fan from the left holder bearing.	 

4-2 Outdoor Unit

No	Parts	Procedure	Remark
1	Cabinet	1) Turn off the unit and remove the power cable. 2) Remove the top cover. 3) Remove the control box cover. 4) Unplug the ass'y cable. 5) Remove the cabi-side. 6) Remove the cabi-front. * When you assemble the parts, check if the each parts and electric connectors are fixed firmly.	
2	Fan Motor & Propeller Fan	1) Do Procedure 1 above. 2) Remove the nut flange. (Turn to the right to remove as it is a left turned screw) 3) Disassemble the propeller fan.	

5. Troubleshooting

5-1 Items to be checked first

1) The input voltage should be rating voltage ±10% range.
   The airconditioner may not operate properly if the voltage is out of this range.
2) Is the link cable linking the indoor unit and the outdoor unit linked properly?
   The indoor unit and the outdoor unit shall be linked by 7 cables.
   Check the terminals if the indoor unit and outdoor unit are properly linked by the same number of cables.
   Otherwise the airconditioner may not operate properly.
3) When a problem occurs due to the contents illustrated in the table below it is a symptom not related to the malfunction of the airconditioner.

NO	Operation of air conditioner	Explanation
1	The STD operation indication LED blinks when a power plug of the indoor unit is plugged in for the first time.	It indicates power is on. The LED stops blinking if the operation ON/OFF button on the remote control unit is pushed.
2	In a COOL operation mode, the compressor does not operate at a room temperature higher than the setting temperature that the IN DOOR FAN should operate. In a HEAT operation mode, the compressor does not operate at a room temperature lower than the setting temperature that indoor fan should operate.	In happens after a delay of 3 minutes when the compressor is reoperated. The same phenomenon occurs when a power is on. As a phenomenon that the compressor is reoperated after a delay of 3 minutes, the indoor fan is adjusted automatically with reference to a temperature of the air blew
3	Fan speed setting is not allowed in AUTO or DRY mode.	The speed of the indoor fan is set to LL in DRY mode. Fan speed is 5 steps is selected automatically in AUTO mode.
4	Compressor stops operation intermittently in DRY mode.	Compressor operation is controlled automatically in DRY mode depending on the room temperature and humidity.
5	Compressor of the outdoor unit is operating although it is turned off in a HEAT mode.	When the unit is turned off while de-ice is activated, the compressor continues operation for up to 9 minutes (maximum) until the deice is completed.
6	Timer LED only of the indoor unit lights up and the air conditioner does not operate.	Timer is being activated and the unit is in ready mode. The unit operates normally if the timer operation is cancelled.
7	The compressor and indoor fan stop intermittently in HEAT mode.	The compressor and indoor fan stop intermittently if room temperature exceeds a setting temperature in order to protect the compressor from overheated air in a HEAT mode.
8	Indoor fan and outdoor fan stop operation intermittently in a HEAT mode.	The compressor operates in a reverse cycle to remove exterior ice in a HEAT mode, and indoor fan and outdoor fan do not operate intermittently for within 20% of the total heater operation
9	The compressor stops intermittently in a COOL mode or DRY mode, and fan speed of the indoor unit decreases.	The compressor stops intermittently or the fan speed of the indoor unit decreases to prevent inside/outside air frozen depending on the inside/outside air temperature.

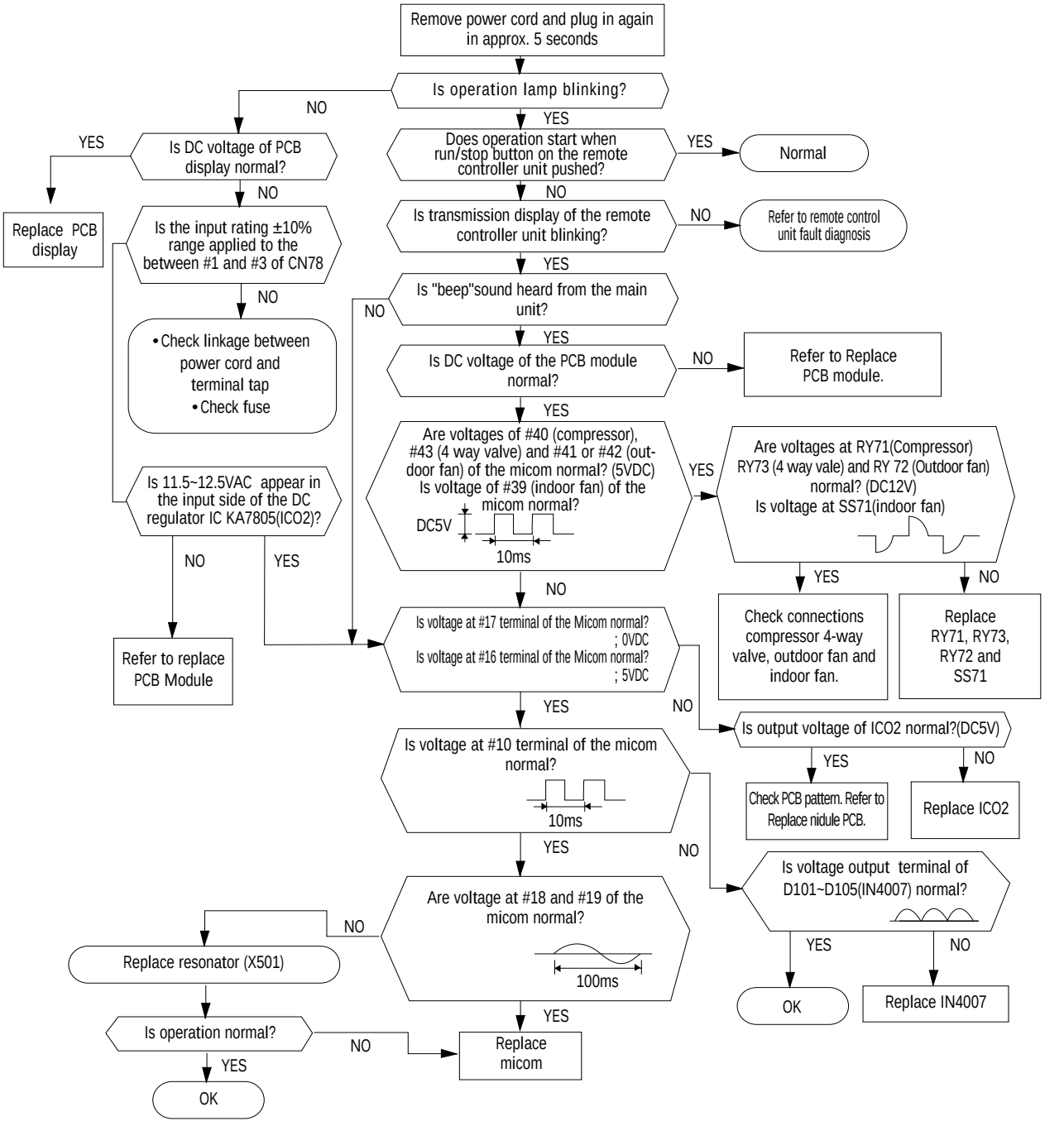
4) Indoor unit observes operation condition of the air conditioner, and displays self diagnosis details on the display panel.

NO	Display	Self Diagnosis
1	STD LED blinking (1Hz)	Restore from power failure (input initial power)
2	TIMER LED blinking (1Hz)	Indoor unit Room sensor Error (open or short)
3	STD and TIMER LED blinking (1Hz)	Indoor unit heat exchanger temperature sensor Error (open or short)
4	NATURE LED blinking (1Hz)	Indoor fan malfunctioning (for speed is Below 450rpm)
5	STD, NATURE and TIMER LED blinking(1HZ)	EEPROM Error
6	AII LED blinking (1Hz)	Option Error (Option wasn't setup or option data error)

5-2-1 No Power (completely dead)-Initial diagnosis

1) Checklist :
   (1) Is input voltage normal? (the rating voltage ±10% range)
   (2) Is AC power linked correctly?
   (3) Is input voltage of DC regulator IC KA7805 (IC02) normal? (11.5VDC-12.5VDC)
   (4) Is output voltage of DC regulator IC KA7805 (IC02) normal? (4.5VDC-5.5VDC)

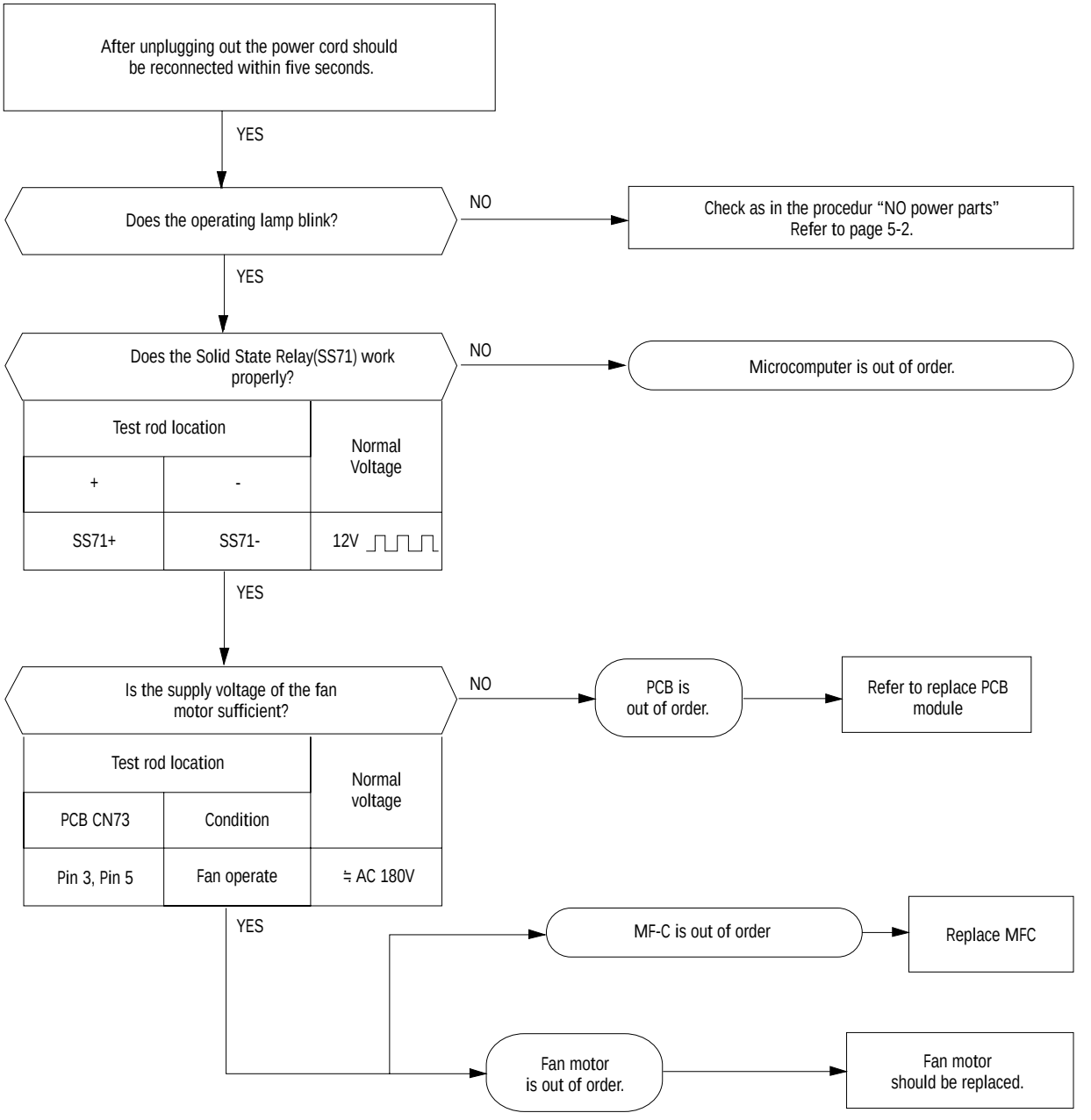
2) Troubleshooting procedure


Remove power cord and plug in again in approx. 5 seconds
Is operation lamp blinking?
NO
YES
Is DC voltage of PCB display normal?
YES
Replace PCB display
NO
Is the input rating ±10% range applied to the between #1 and #3 of CN78
NO
• Check linkage between power cord and terminal tap
• Check fuse
Is 11.5~12.5VAC appear in the input side of the DC regulator IC KA7805(ICO2)?
NO
YES
Refer to replace PCB Module
Does operation start when run/stop button on the remote controller unit pushed?
YES
Normal
NO
Is transmission display of the remote controller unit blinking?
NO
Refer to remote control unit fault diagnosis
YES
Is "beep"sound heard from the main unit?
NO
YES
Is DC voltage of the PCB module normal?
NO
Refer to Replace PCB module.
YES
Are voltages of #40 (compressor), #43 (4 way valve) and #41 or #42 (out-door fan) of the micom normal? (5VDC)
Is voltage of #39 (indoor fan) of the micom normal?
DC5V
10ms
YES
Are voltages at RY71(Compressor) RY73 (4 way vale) and RY 72 (Outdoor fan) normal? (DC12V)
Is voltage at SS71(indoor fan)
YES
NO
Check connections compressor 4-way valve, outdoor fan and indoor fan.
Replace RY71, RY73, RY72 and SS71
NO
Is voltage at #17 terminal of the Micom normal? ; 0VDC
Is voltage at #16 terminal of the Micom normal? ; 5VDC
YES
NO
Is output voltage of ICO2 normal?(DC5V)
YES
NO
Check PCB pattern. Refer to Replace nidule PCB.
Replace ICO2
Is voltage at #10 terminal of the micom normal?
10ms
YES
NO
Is voltage output terminal of D101~D105(IN4007) normal?
YES
NO
OK
Replace IN4007
Are voltage at #18 and #19 of the micom normal?
100ms
NO
YES
Replace resonator (X501)
Is operation normal?
NO
YES
Replace micom
OK

5-2-2 When the Indoor Unit Fan Does Not Operate. (Initial Diagnosis)

1) Checklist :
   (1) Is the indoor unit fan motor properly connected with the connector (CN73)?
   (2) Is the AC voltage correct?
   (3) Is HALL IC in indoor fan motor properly connected with the connector (CN43)?
   (4) Is the running capacitor properly connected with the solder part of the PCB?

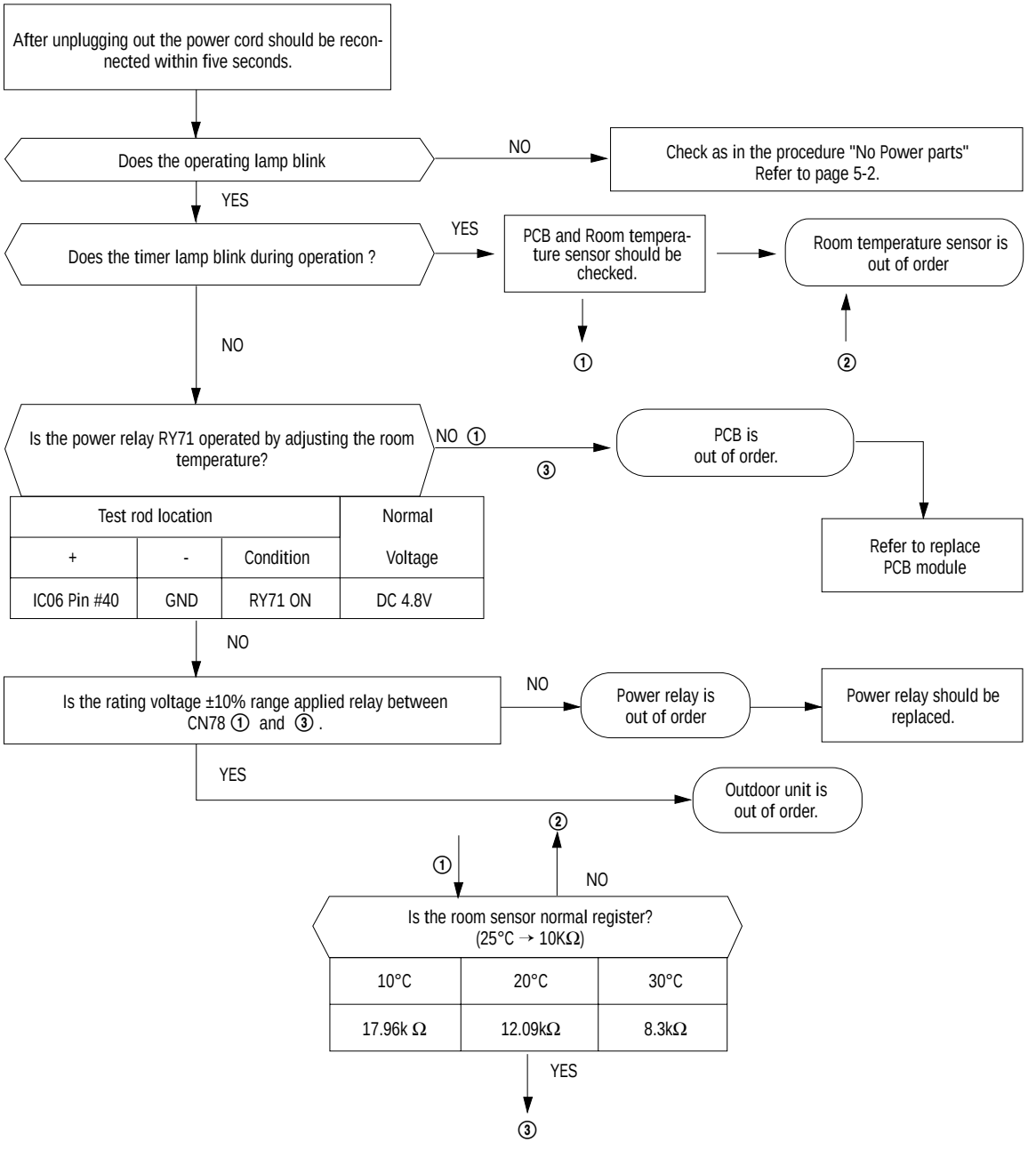
2) Troubleshooting procedure



5-2-3 When the Outdoor Unit Does Not Operate. (Initial Diagnosis)

1) Checklist :
   (1) Is input voltage normal? (the rating voltage ±10% range)
   (2) Is the set temperature of the remote control higher than room temperature in COOL mode?
   (3) Is the set temperature of the remote control lower than room temperature in HEAT mode?
   (4) Is the POWER IN connector (CN78) linked correctly?
   (5) Is the outdoor unit properly connected with the TERMINAL BLOCK connector(7P)?

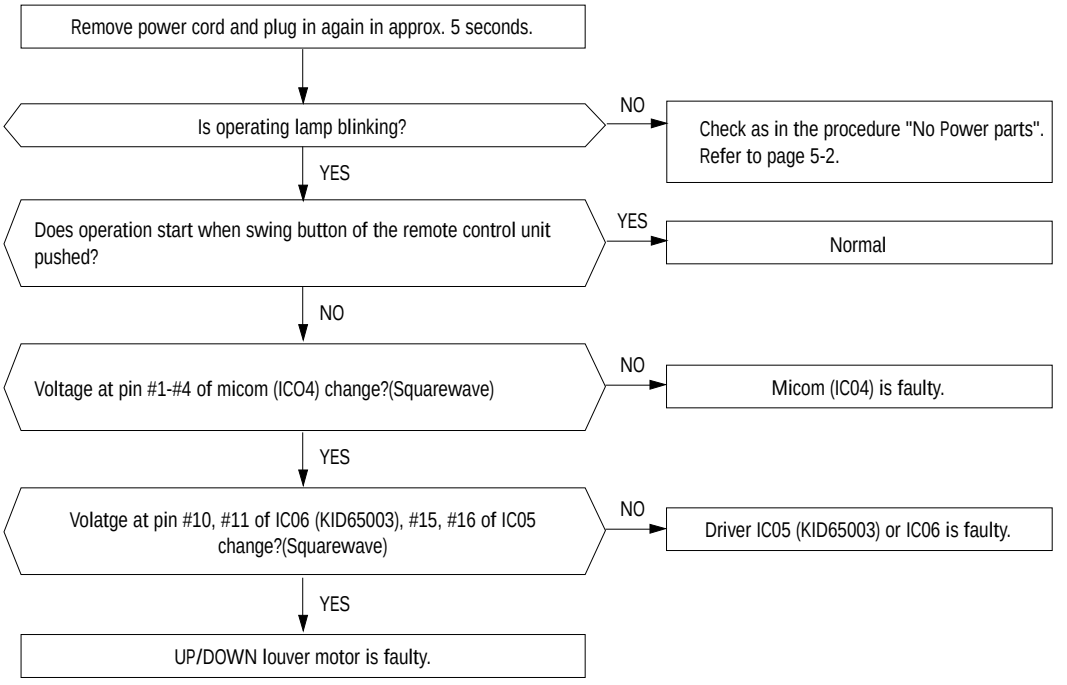
2) Troubleshooting procedure



5-2-4 When the UP/DOWN Louver Moter Does Not Operate. (Initial Diagnosis)

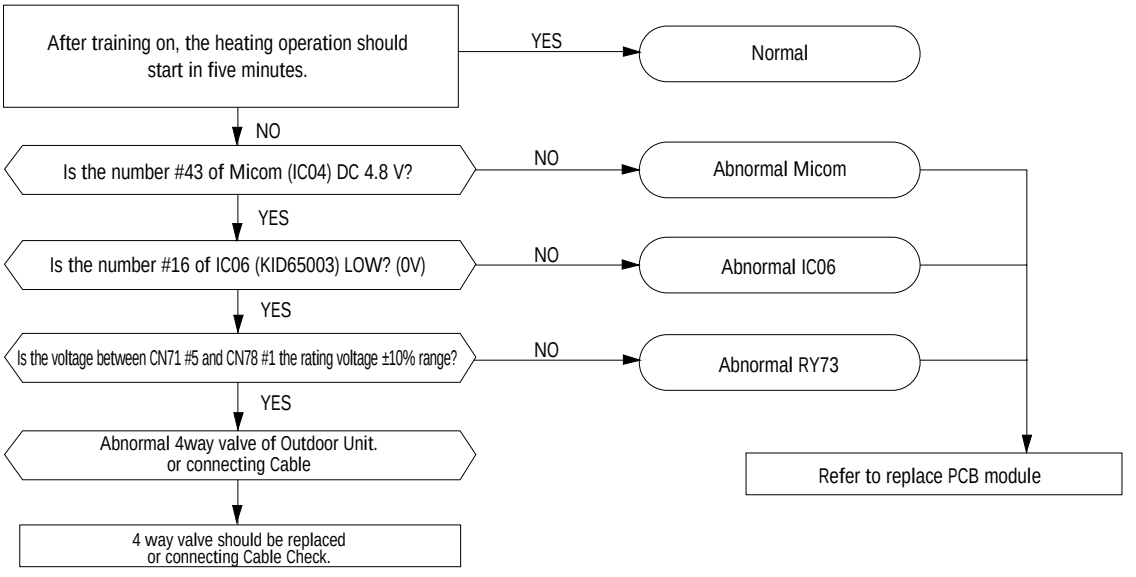
1) Checklist :
   (1) Is input voltage normal? (the rating voltage ±10% range)
   (2) Is the UP/DOWN louver motor properly connected with the connector (CN61)?

2) Troubleshooting procedure


Remove power cord and plug in again in approx. 5 seconds.
Is operating lamp blinking?
NO
Check as in the procedure "No Power parts". Refer to page 5-2.
YES
Does operation start when swing button of the remote control unit pushed?
YES
Normal
NO
Voltage at pin #1-#4 of micom (ICO4) change?(Squarewave)
NO
Micom (IC04) is faulty.
YES
Volatge at pin #10, #11 of IC06 (KID65003), #15, #16 of IC05 change?(Squarewave)
NO
Driver IC05 (KID65003) or IC06 is faulty.
YES
UP/DOWN louver motor is faulty.

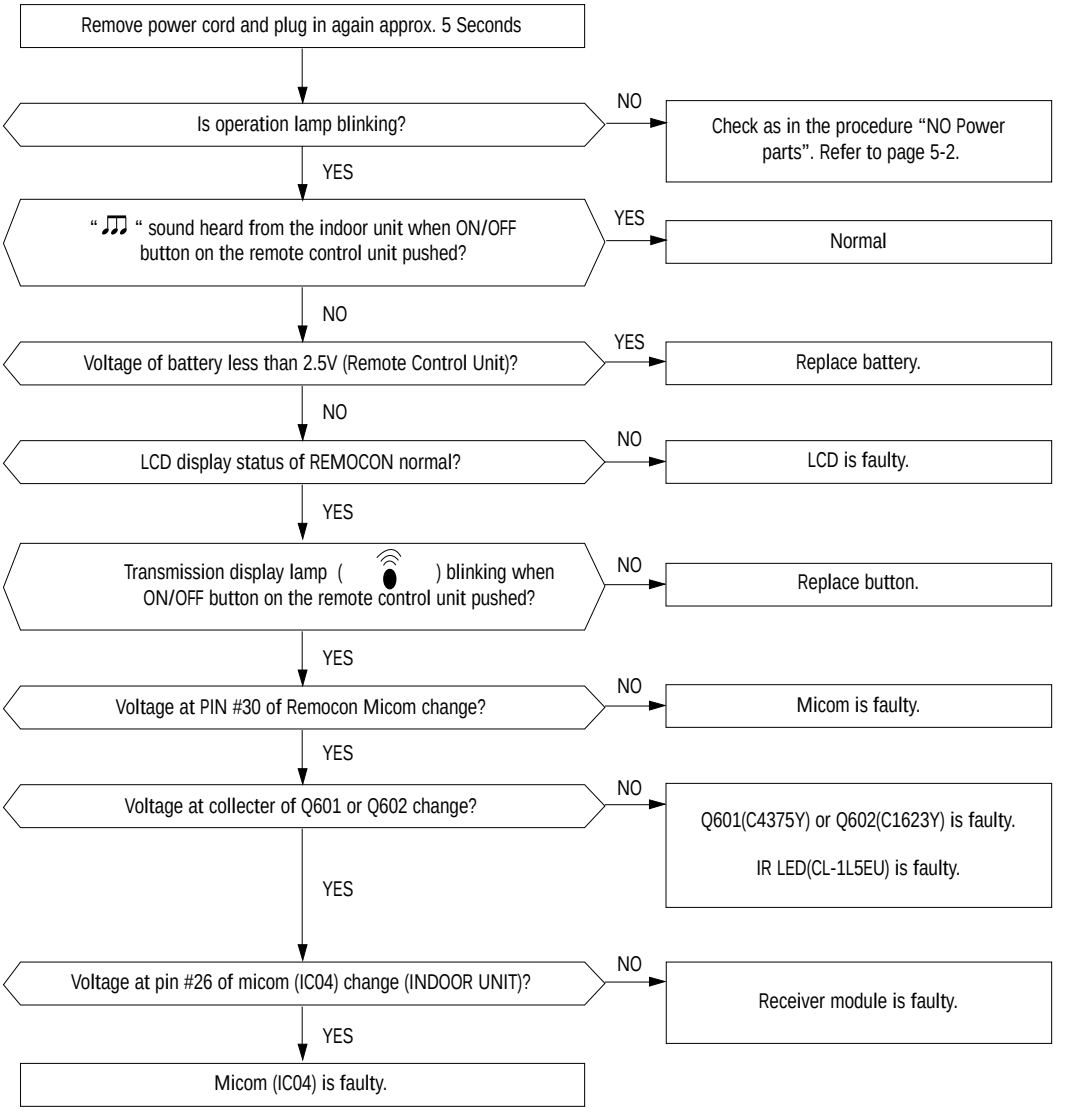
5-2-5 In the Heat mode, When there is no warm air current. Check this first;

(1) Is the set temperature of Remote Control lower than room temperature in Heat mode?
(2) Is the Indoor PCB properly connected with the CN71 and CN78 connector?


After training on, the heating operation should start in five minutes.
YES
Normal
NO
Is the number #43 of Micom (IC04) DC 4.8 V?
NO
Abnormal Micom
YES
Is the number #16 of IC06 (KID65003) LOW? (0V)
NO
Abnormal IC06
YES
Is the voltage between CN71 #5 and CN78 #1 the rating voltage ±10% range?
NO
Abnormal RY73
YES
Abnormal 4way valve of Outdoor Unit. or connecting Cable
Refer to replace PCB module
4 way valve should be replaced or connecting Cable Check.

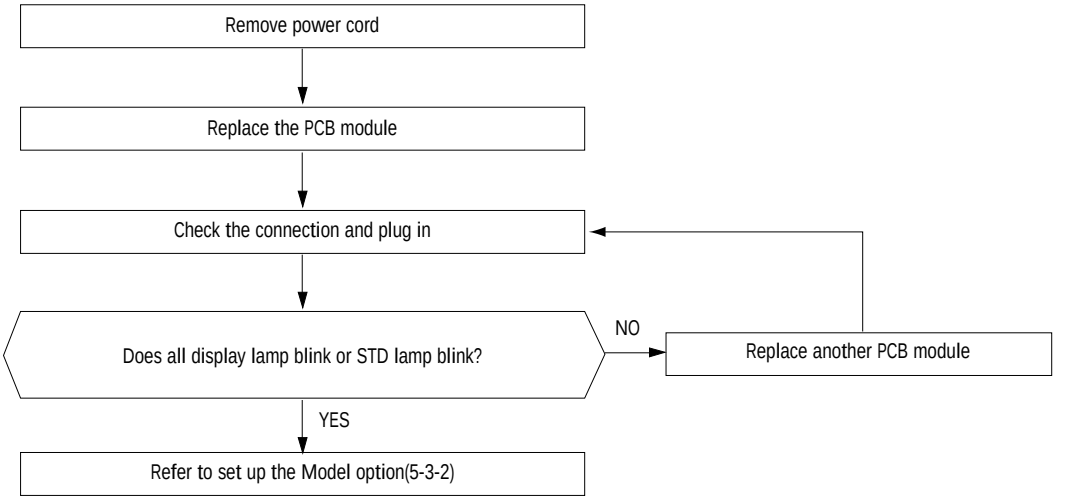
5-2-6 If Operation By Remote Control Unit Is Impossible. (Initial Diagnosis)

1) Troubleshooting procedure


Remove power cord and plug in again approx. 5 Seconds
Is operation lamp blinking?
NO
Check as in the procedure "NO Power parts". Refer to page 5-2.
YES
" ♫ " sound heard from the indoor unit when ON/OFF button on the remote control unit pushed?
YES
Normal
NO
Voltage of battery less than 2.5V (Remote Control Unit)?
YES
Replace battery.
NO
LCD display status of REMOCON normal?
NO
LCD is faulty.
YES
Transmission display lamp ( ) blinking when ON/OFF button on the remote control unit pushed?
NO
Replace button.
YES
Voltage at PIN #30 of Remocon Micom change?
NO
Micom is faulty.
YES
Voltage at collecter of Q601 or Q602 change?
NO
Q601(C4375Y) or Q602(C1623Y) is faulty.
IR LED(CL-1L5EU) is faulty.
YES
Voltage at pin #26 of micom (IC04) change (INDOOR UNIT)?
NO
Receiver module is faulty.
YES
Micom (IC04) is faulty.

5-3 Replace PCB module

5-3-1 Replace PCB module


Remove power cord
Replace the PCB module
Check the connection and plug in
Does all display lamp blink or STD lamp blink?
NO
Replace another PCB module
YES
Refer to set up the Model option(5-3-2)

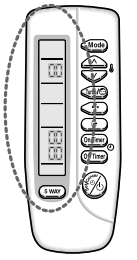
5-3-2 Set up the Model option

The Method for Setting up the model option with remocon

- **It is necessary to set up option code after replacing the main-PBA as a service parts.**
  Make sure that you can set up the option of code the remote controller after you replace the main PBA otherwise, the unit won't be working properly and all LED lamps on display will be flickering.

Step 1 : Preparing the remocon to main PBA option set

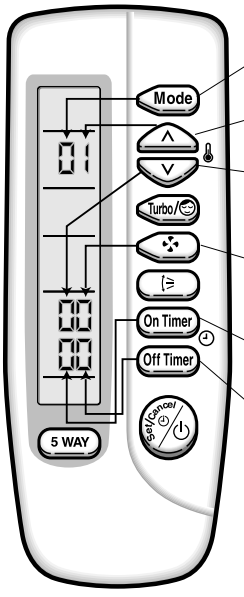
1st Remove the battery from the remocon.
2nd Press the temperature raise/down button simultaneously and insert the battery again.
3rd Make sure the remocon display shown as 00 00 00.



Step 2 : Second stage preparation of the remocon option set.

✺ **Note** ; In case the wrong letter has been selected, continue to press the button until the correct letter appears.

1st If the first stage number "0" appears on the display, proceed to the second stage.
2nd Every time the ① and ⑦ button, "0" and "1" each continue to appear.
3rd Whenever pressing the ②, ③, ④, ⑤, ⑥, ⑧, ⑨, ⑩, ⑪, ⑫ button, the number increase from 0~9(0123456789) and A, b, C, d, E, F each time.



① If the first number is 0, it is correct otherwise press Mode until 0 appear.

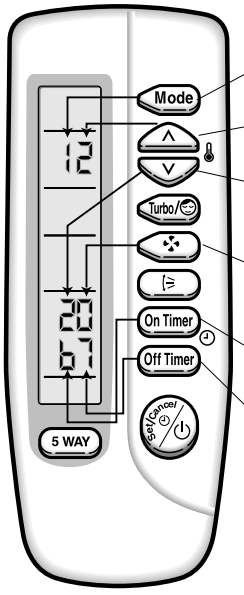
② When pressing the ∧ button 0 ~ F appear on the display, select one of them.

③ When pressing the ∨ button 0 ~ F appear on the display, select one of them.

④ When pressing the button 0 ~ F appear on the display, select one of them.

⑤ When pressing the On Timer button 0 ~ F appear on the display, select one of them.

⑥ When pressing the Off Timer button 0 ~ F appear on the display, select one of them.



① If the first number is 1 , it is correct otherwise press Mode until 1 appear.

② When pressing the ∧ button 0 ~ F appear on the display, select one of them.

③ When pressing the ∨ button 0 ~ F appear on the display, select one of them.

④ When pressing the fan button 0 ~ F appear on the display, select one of them.

⑤ When pressing the On Timer button 0 ~ F appear on the display, select one of them.

⑥ When pressing the Off Timer button 0 ~ F appear on the display, select one of them.

Step 3 : Reconfirming option set after completion

(in case of ex. 017d25-17021d)

After pressing Mode selector for the 0 mode, the display shown as 01 7d 25.
After pressing Mode selector for the 1 mode, the display shown as 17 02 1d .

Step 4 : Pressing the ON/OFF button (⏻)

When pressing the operation ON/OFF key with the direction of remote controller for unit, the sound “Ding” or “Diriring” is heard and the first LED lamp on the left side is flickering at the same time, then the input of option is completed. (If the diriring sound isn’t heard, try again pressing the ON/OFF button.)

Step 5 : Unit operation test-run

First, Remove the battery from the remote controller.
Second, Re-insert the battery into the remote controller.
Third, Press ON/OFF key with the direction of remote controller for set.

• Error Mode

1st If all lamps of indoor unit are flickering, Plug out and plug in again and pressing ON/OFF key to retry.

2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for it's model.

■ OPTION ITEMS

REMOCON / MODEL	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
AQA24C5ME SH24AC5	0	9	5	9	1	4	1	A	0	3	5	1
AQA24C6ME SH24AC6	0	8	5	9	1	4	1	A	0	3	5	1
AQA18C9ME SH18AC9	0	9	5	9	1	4	1	A	0	2	1	d
AQA18C0ME SH18AC0	0	8	5	9	1	4	1	A	0	2	1	d

5-4 PCB Inspection

5-4-1 Cautions for Part Replacement

1. The human body carries much static electricity. Before touching a part for repair, replacement or the similar purpose, be sure to touch a grounded metallic portion by hand to let the static electricity go through the metallic portion to the earth. Especially when handling any micro computer or IC, carefully remove such static electricity before touching them.

2. When repairing any part on a work bench, be sure to place an insulative sheet on the bench and always keep the sheet surface neat without any metal fragments. If any such fragment touches a part, a secondary trouble will possibly be caused in the part.

3. Before replacing any parts, be sure to turn off the power supply. If such replacement is done with the power supply kept on, an electric shock, short circuit or destruction of a part may result.

4. During replacement or repair of a part, carefully handle it : The printed circuit board has fine lead wires (jumper wires) and glass-made parts (diode) on its substrate. So if a circuit board is roughly handled, such lead wires and parts will be easily broken or damaged by bending or shock.

5. When soldering the lead wires of any new part, be sure to polish them using an emery paper or the like before solding them. Since the lead wires of any new part are covered with an oxide film, solder cannot adhere to the lead wires if not polished.

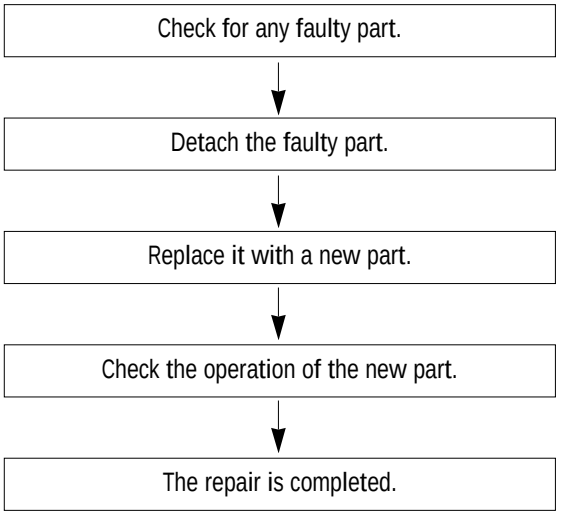
6. When soldering any part, care should be exercised not to apply any high-wattage soldering iron to the part for a long time. Some parts are of so low a heat resistance that they may be broken or have the properties changed if a soldering iron is so applied (Otherwise, the pattern may possibly be separated and raised).

7. The heat of the soldering iron should be transfered to the entire object to be soldered. If the solder pieces are not well fused due to insufficient transfer of the heat from the soldering iron, no satisfactory electrical continuity can be assured even if the soldered objects appear well connected to each other.

8. The solder used should be limited to a minimum. If excessive solder is used, it will cause inter-pattern contact, which may cause malfunction of the circuit.

5-4-2 Procedure

The parts should be replaced in the following procedure.

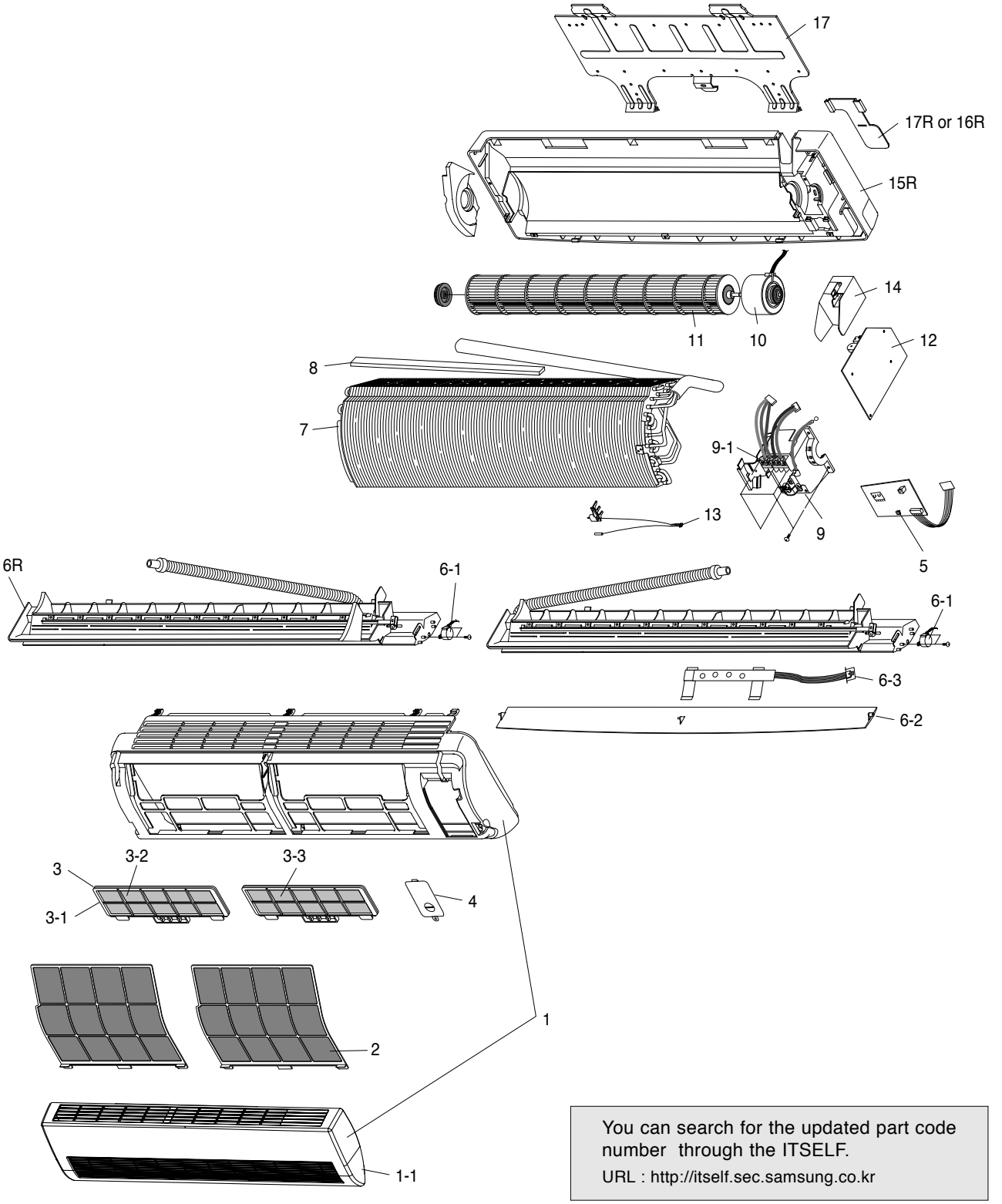

Check for any faulty part.
Detach the faulty part.
Replace it with a new part.
Check the operation of the new part.
The repair is completed.

5-4-3 Detailed Procedure

No.	Malfunction	Checking point (symptoms)	Causes
1	Pull out the power plug from the AC terminal and confirm the fuse on the PCB assembly	1. Is the broken?	• Voltage over • Indoor unit fan motor short-circuit
2	Turn the power on.	Voltage check	SMPS circuit is faulty
		1. AC voltage at both C702? : rating voltage ±10% range	• SMPS circuit is faulty
		2. DC voltage at both C101? : about DC 325[v] ±10%	
		3. DC voltage at IC02 : IN-GND → DC12[v] : OUT-GND → DC5[v]	
		4. Voltage waveform at Q201 : collector-GND → squarewave	• PC02, R202-R205
3	Set the power on.	Voltage check	
		1. Voltage of IC06 COOL : PIN#40, PIN#41 or PIN#42 HEAT : PIN#40, PIN#41 or PIN#42, PIN#43 : relay on → 0.7[v] : relay off → 12[v]	• IC06 is faulty
		2. Voltage at terminal block ((N1)-1) → rating voltage ((N1)-2 or 4) → rating voltage ((N1)-3) → rating voltage	• RY71 is faulty • RY72 or RY74 is faulty • RY73 is faulty

6. Exploded Views and Parts List

6-1 Indoor Unit



You can search for the updated part code number through the ITSELF.

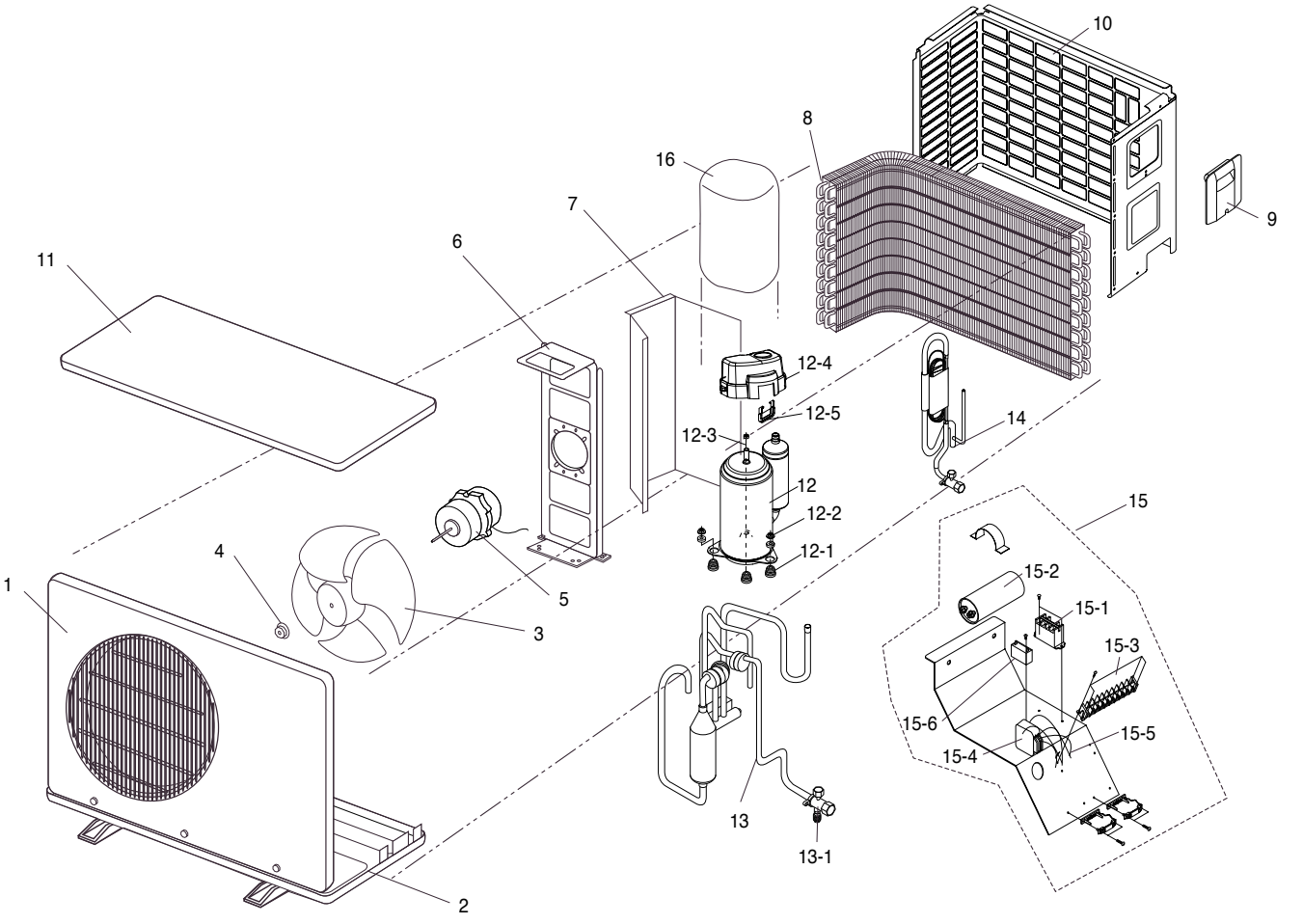
URL : http://itself.sec.samsung.co.kr

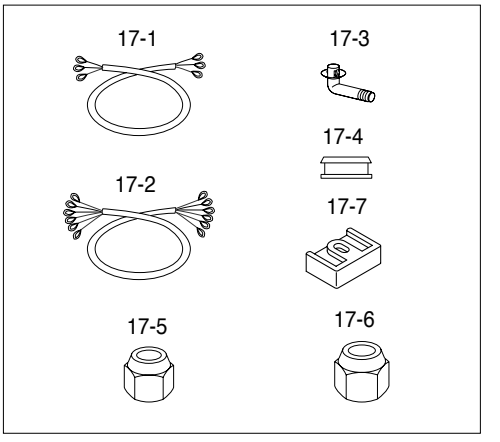
■ Parts List

No.	CODE NO	Description	Specification	Q'TY		Remarks
				AQA24C5(6)ME SH24AC5(6)	AQA18C9(0)ME SH18AC9(0)	
1	DB92-00265B	ASSY FRONT PANEL	ASSY	1	1	
1-1	DB64-00359A	GRILL AIR INLET	HIPS	1	1	
2	DB63-30150C	GUARD AIR FILTER	PP	2	2	
3	DB74-10101C	ASSY CLEANER FILTER	ASSY	1	1	
3-1	DB61-10164B	CASE-CLEANER FILTER	PP	1	1	
3-2	DB74-10082A	DEODORIZING FILTER	POLYESTER/CARBO	1	1	
3-3	DB74-10081A	CLEANER FILTER	POLYESTER/COTTON	1	1	
4	DB63-00289A	COVER TERMINAL	ABS	1	1	
5	DB93-00926A	ASSY S/W & MODULE	ASSY	1	1	
6R	DB94-00099E	ASSY TRAY DRAIN	ASSY	1	1	
6-1	DB31-10153B	ASSY STEPPING MOTOR	ABS	1	1	
6-2	DB66-00104A	BLADE-H	ABS	1	1	
6-3	DB93-00860A	ASS'Y DISPLAY CENTER	ASS'Y	1	1	
7	DB96-01125A	ASSY EVAPORATOR	PLATE 1.2(5/8")	1	1	
	DB96-01125D	ASSY EVAPORATOR	SLIT 1.5(1/2")	-	1	
8	DB67-00058A	SPACER EVAP	PVC	1	1	
9R	DB90-00433Q	ASSY HOLDER MOTOR	ASSY	1	1	
9-1	DB65-00039A	ASSY TERMINAL BLOCK	6P,25A	1	1	
10	DB31-10151C	MOTER FAN IN	IC-9430SKC7A	1	1	
11	DB94-00040J	ASSY CROSS FAN	ASSY	1	1	
12	PD-SH30ZC-00	ASSY MAIN PCB	ASSY	1	1	
13	DB32-00027B	ASSY THERMISTER	ASSY	1	1	
14	DB61-10163A	CASE-CONTROL	ABS(V0)	1	1	
15R	DB94-00107A	ASSY BACK BODY	ASSY	1	1	
16R	DB90-00434A	HOLDER PIPE	PP	1	1	
17	DB70-10663A	PLATE HANGER	SGCC-M	1	1	

6-2 Outdoor Unit

6-2-1 18K BTU

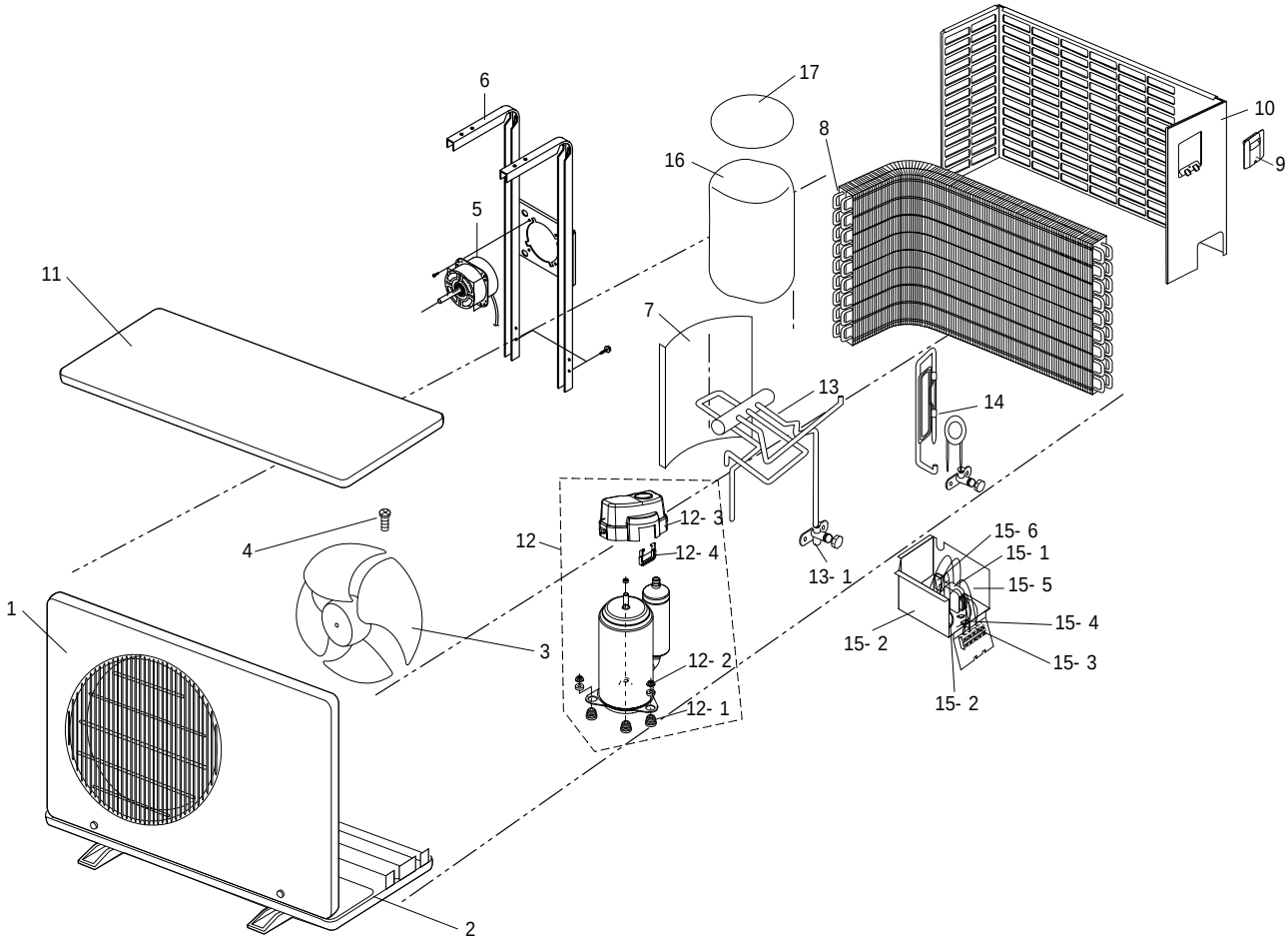


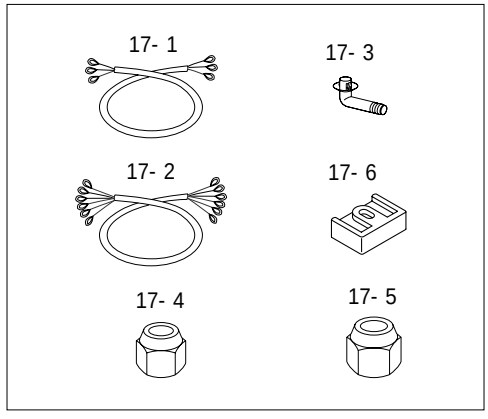


■ Parts List

No.	CODE NO	Description	Specification	Q'TY	Remarks
				SH18AC9(0)X	
1	DB64-60030D	CABINET FRONT	ASSY	1	
2	DB90-20160F	ASSY BASE-OUT	ASSY	1	
3	DB67-50063A	FAN-PROPELIER	ASSY	1	
4	DB60-30020A	NUT-FLANGE	M6, CCW	1	
5	DB31-00056C	MOTER FAN OUT	ASS030AVEB	1	
6	DB61-20008C	BASE-MOTER	SGCC-M	1	
7	DB94-00165A	ASSY PARTITION	ASSY	1	
	DB67-00162A	PARTITION	SGCC-M	1	
8	DB96-01724B	ASSY CONDENSER	ASSY	1	
	DB96-01605A	ASSY COND UNIT	ASSY	1	
9	DB63-10490B	COVER-CONTROL	ABS	1	
10	DB90-10671J	ASSY CABINET BACK	SC-90073T	1	
	DB64-60172G	CABINET BACK	SC-90073T	1	
11	DB63-10011A	TOP-COVER	SC-90073T	1	
	DB90-10613D	ASSY CABI-UP	SC-90073T	1	
12	DB95-00229A	COMPRESSOR	PA225X3F-4MS(E)	1	
12-1	DB73-00082A	GROMMET ISOLATOR	NR	3	
12-2	DB60-30028A	NUT-WASHER	M8	3	
12-3	DB60-30018A	NUT-FLANGE	M5	1	
12-4	DB63-00450A	COVER-TERMINAL	POLYCARBONATE	1	
12-5	DB63-00451A	COVER-BUSHING	POLYCARBONATE	1	
13	DB99-00164A	ASSY 4WAY VALVE	ASSY	1	
13-1	DB62-00898A	VALVE SERIVCE, 1/2"	1/2"	1	
14	DB99-00165A	ASSY-CHECK VALVE	ASSY	1	
15	DB93-00673E	ASSY-CONTROL OUT	ASSY	1	
15-1	3501-001184	RELAY-POWER	45MA	1	
15-2	2501-001239	CAPACITOR	45μF/450VAC	1	
15-3	DB65-00040A	TERMINAL BLOCK	ASSY	1	
15-4	DB95-90026B	ASSY-SPARK KILLER	ASSY	1	
15-5	3601-000236	FUSE	2A,250V	1	
15-6	2301-001370	MOTOR CAPACITOR	2.5μF/450VAC	1	
16	DB72-50537A	CLOTH SOUND		1	
17-1	DB39-00121A	CONNECT POWER	3G,2.5mm^2	1	
17-2	DB39-00171A	CONNECT WIRE	7G, 1.00mm^2	1	
17-3	DB67-20011A	DRAIN PLUG OUT	PP	1	
17-4	DB63-10355C	CAP DRAIN	CR	1	
17-5	DB60-30010A	NUT FLANGE 1/4"	C3771BD	2	
17-6	DB60-30010C	NUT FLANGE 1/2"	C3771BD	2	
17-7	DB73-20134A	RUBBER-LEG	NR	4	

6-2-2 24K BTU


6
17
10
8
16
9
5
11
7
13
14
12- 3
12
4
12- 4
13- 1
15- 6
15- 1
15- 5
1
3
12- 2
15- 4
15- 2
15- 3
12- 1
15- 2
2

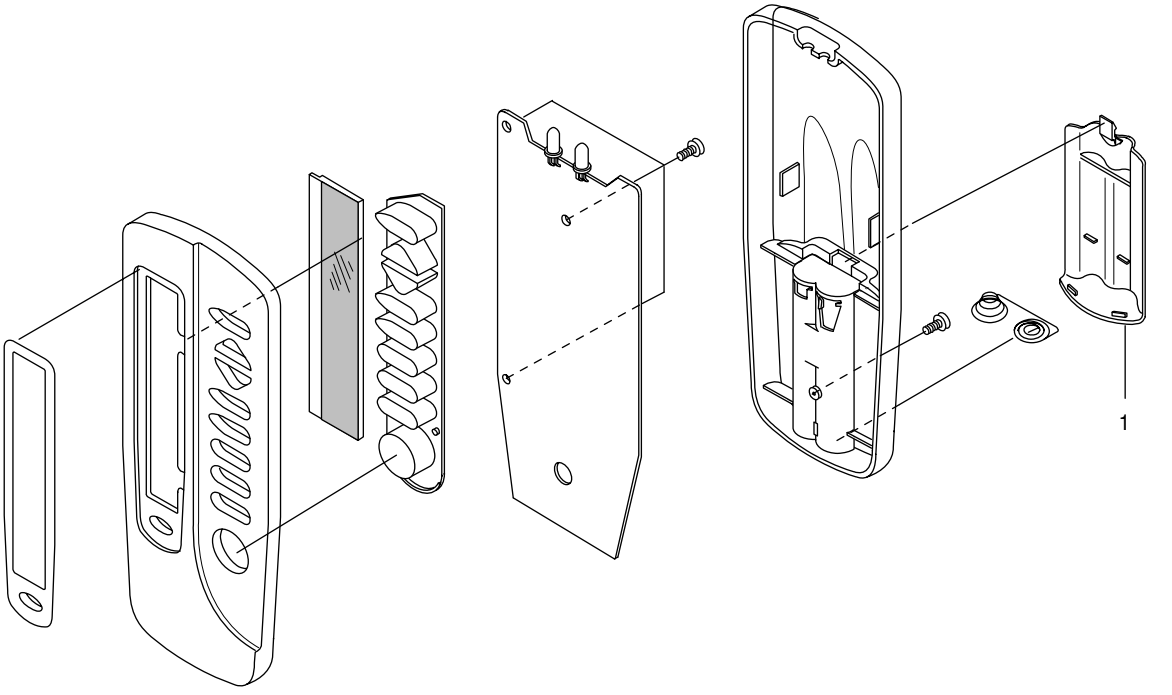

17- 1
17- 3
17- 2
17- 6
17- 4
17- 5

■ Parts List

No.	CODE NO	Description	Specification	Q'TY	Remarks
				SH24AC5(6)X	
1	DB90-00652P	ASSY-CABI FRONT	ASSY	1	
2	DB90-20210G	ASSY-BASE OUT	ASSY	1	
3	DB67-50074A	FAN PROPELIER	AS+G/F20%	1	
4	DB60-20020A	BOLT SPECIAL	M8 L25	1	
5	DB31-00027E	MOTER FAN OUT	OSEM-906SRC	1	
6	DB95-20147A	ASSY-MOTOR B/K	SGCC-M	1	
7	DB94-50039C	PARTITION	SGCC-M	1	
	DB94-00080B	ASSY-PARTITION	ASSY	1	
8	DB96-01724A	ASSY-CONDENSER	ASSY	1	
	DB96-01604A	ASSY-COND UNIT	ASSY	1	
9	DB63-10490B	COVER-CONTROL	ABS(VO)	1	
10	DB64-60160E	CABINET-SIDE	SC-90073T	1	
11	DB90-00569B	ASSY-CABI UPPER	ASSY	1	
12	DB95-00228A	COMPRESSOR	PA290X3F-4MS(E)	1	
12-1	DB73-00082A	GROMMET ISOLATOR	NR	3	
12-2	DB60-00028A	NUT WASHER	M8	3	
12-3	DB63-00450A	COVER TERMINAL	POLYCARBONATE	1	
12-4	DB63-00451A	COVER BUSING	POLYCARBONATE	1	
13	DB99-00173A	ASSY 4WAY VALVE	ASSY	1	
13-1	DB62-00898A	VALVE SERIVCE, 5/8"	5/8"	1	
14	DB99-00191A	ASSY-CHECK VALVE	ASSY	1	
15	DB93-00679C	ASSY CONTROL OUT	ASSY	1	
15-1	3501-001184	POWER-RELAY	30ms	1	
15-2	2501-001239	CAPACITOR	45μF/450VAC	1	
15-3	DB65-00040A	TERMINAL BLOCK	7P	1	
15-4	DB95-90026B	SPARK KILLER	-	1	
15-5	3601-000236	FUSE	2A,250V	1	
15-6	2301-001379	MOTOR CAPACITOR	4μF/450VAC	1	
16	DB72-00690A	SPONGE-COMP SIDE	PVC+FELT	1	
17-1	DB39-00121A	CONNECTOR POWER	3G,2.5mm^2	1	
17-2	DB39-00171A	CONNECT WIRE	7G, 1.0mm^2	1	
17-3	DB67-20011A	DRAIN PLUG OUT	PP	1	
17-4	DB63-30010A	NUT FLANGE 1/4"	C3771BD	2	
17-5	DB60-30010D	NUT FLANGE 5/8"	C3771BD	2	
17-6	DB73-20134A	RUBBER-LEG	NR	4	

6-3 Remote Control & PCB Box

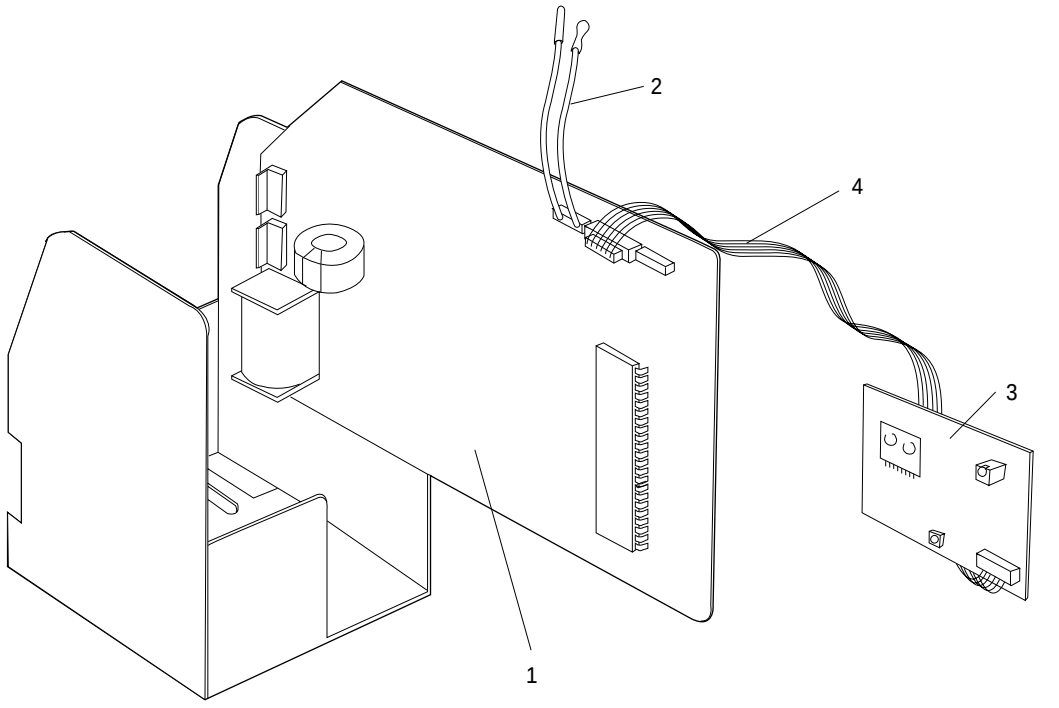
6-3-1 Remote Control (DB93-00251L)



■ Parts List

No	Description	Specification	Q'TY	Remark
	ASS'Y PCB REMOCON	ARH-403	1	
1	BATTERY COVER		1	

6-3-2 PCB Box

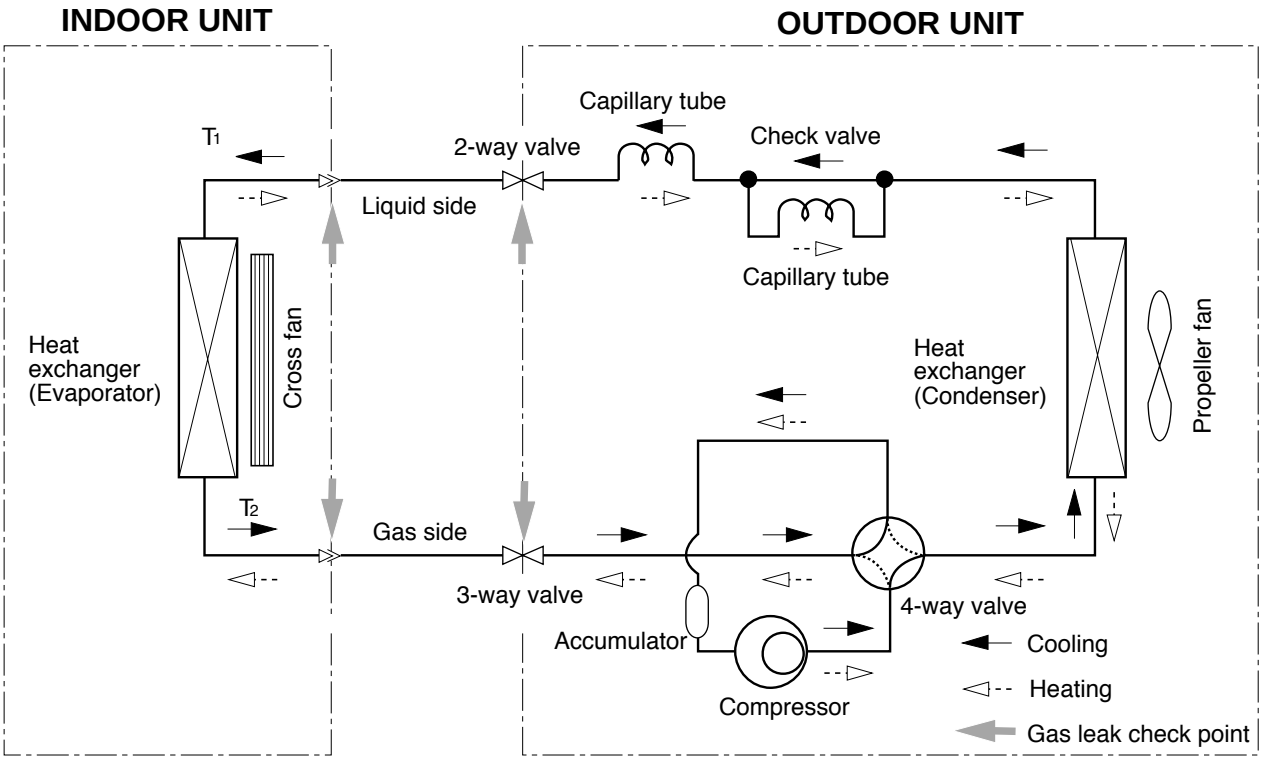


■ Parts List

No	CODE NO	Description	Specification	Q'TY	Remark
1	PD-SH30ZC-00	ASS'Y MAIN PCB	PD-SH30ZC-00	1	
2	DB32-00027B	ASS'Y THERMISTOR	103AT 240/240	1	
3	DB93-00926A	ASS'Y PCB S/W & MODULE	ASS'Y	1	
4	DB39-00172A	CONNECTOR WIRE DISPLAY	AWG#26	1	

7. Block Diagrams

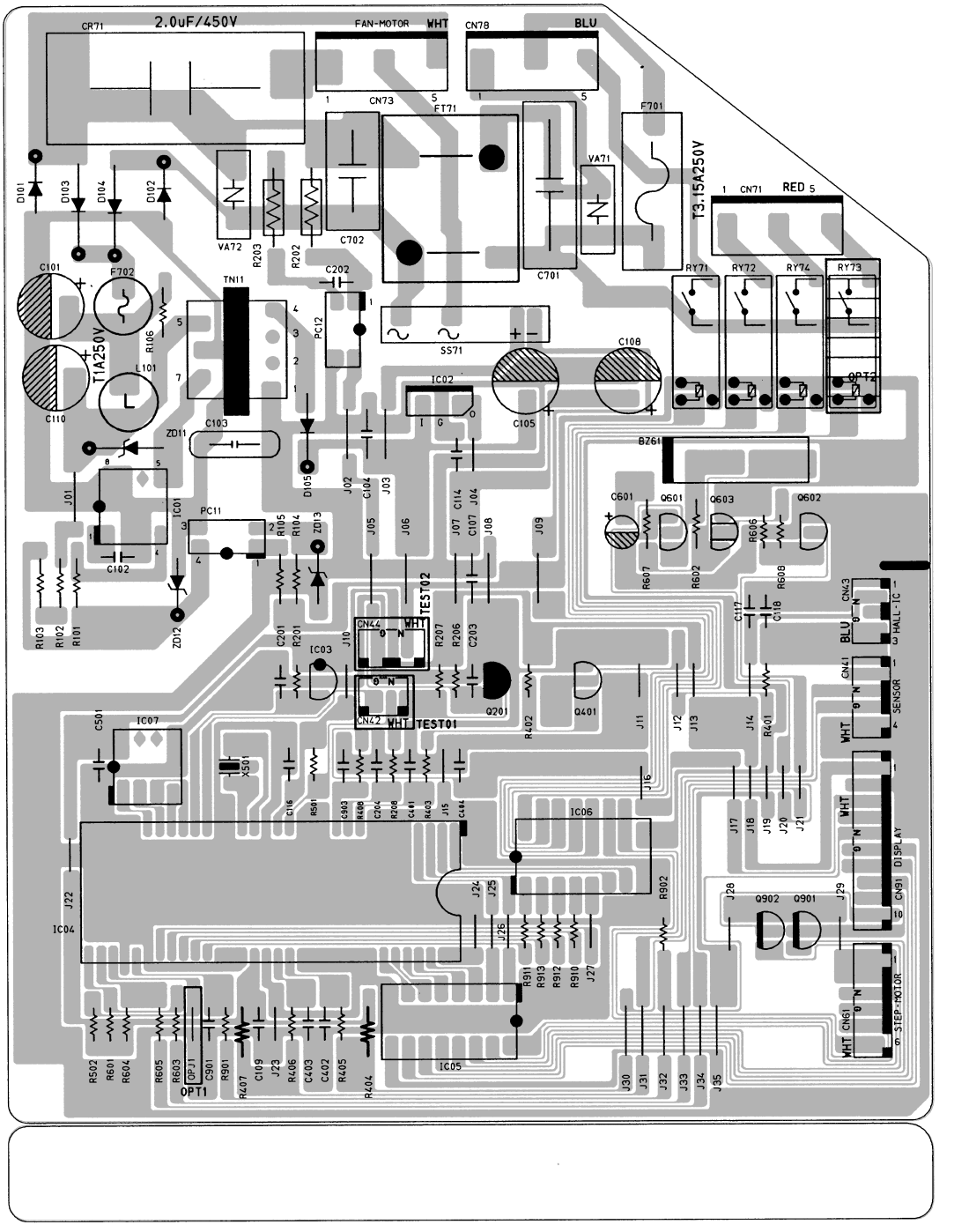
7-1 Refrigerating Cycle Block Diagram



8. PCB Diagrams

8-1 Main PCB

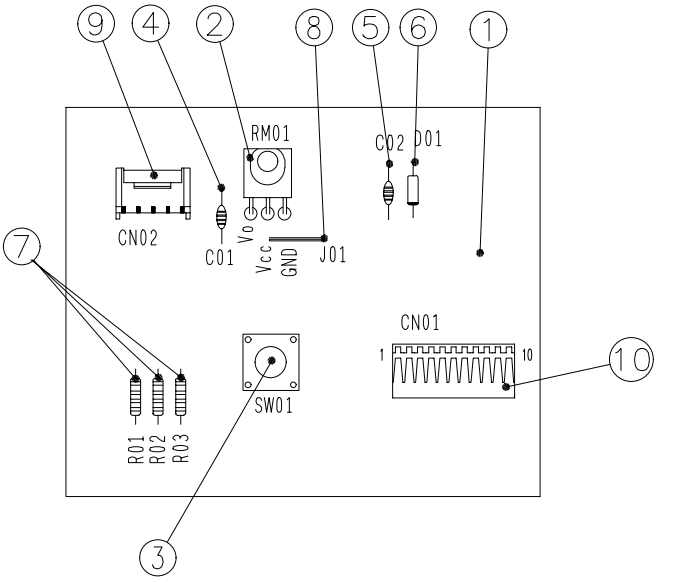
8-1-1 Indoor Unit (PD-SH30ZC-00/PD-SH30ZC-02)



■ Parts List

No	Design-Location	Description	Specification	Q'TY
1	C103	C-CERAMIC,DISC	2.2nF,20%,400V,Y5U,TP,12.	1
2	C702	C-FILM,MPPF	100nF,10%,275V,BK,18x6x12,15	1
3	CR71	C-FILM,MPPF	2000nF,+10-5%,450V,BK,38x18x	1
4	C701	C-FILM,MPEF	220NF,10%,275V,BK,26.5X8.5X1	1
5	RY71,72,73,74	RELAY-MINIATURE	12VDC,200MW,3000MA,1FORM	4
6	SS71	SSR	12Vdc,-,2A,1mS,1mS	1
7	IC04	IC MICOM	S3C8469(SDIP)	1
8	IC02	IC-VOLT REGU	KA7805A,TO-220AB,1A,0/125C,	1
9	TN11	TRANS	2UEW0.30/2UEW0.45,1.5KV,1KHz,-,7Pi	1
10	FT71	CHOKE-COIL	LSA-05230P,AC250V,2A,30.5x22x3	1
11	BZ61	BUZZER	CBE2220BA,STICK,-,-,-,-,-,-,-	1
12	F701	FUSE	FST,250V,3.15A,20MM,VDE,50T-03	1
13	F701	HOLDER-FUSE	FH-51H,7.5A,-,-,-,-,-	1
14	D101,102,103,104	DIODE-RECTIFIER	1N4007,1000V,1A,DO-41,TP	4
15	D105	DIODE-RECTIFIER	UG2B,100V,2A,DO-204AC,TP	1
16	ZD12	DIODE-ZENER	DIODE-ZENER;MTZ3.6A,3.6V,3.455-3.695V,50	1
17	ZD13	DIODE-ZENER	DIODE-ZENER;MTZJ11B,11V,10.5-11.05V,500m	1
18	ZD11	DIODE-TVS	DIODE-TVS;ST02D-200,185/200/215V,200W,DO	1
19	Q603	TR-SMALL SIGNAL	TR-SMALL SIGNAL;KSA708-Y,PNP,800mW,TO-92	1
20	Q401,601,602	TR-SMALL SIGNAL	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	3
21	Q901,902	TR-DIGITAL	TR-DIGITAL;KSR2002,PNP,300MW,10K/10K,TO-	2
22	Q201	TR-DIGITAL	TR-DIGITAL;KSR1002,NPN,300MW,10K/10K,TO-	1
23	PC11	PHOTO-COUPLER	PHOTO-COUPLER;TR,50-600%,200mW,DIP-4,ST	1
24	PC12	PHOTO-COUPLER	PHOTO-COUPLER;TR,20-300%,200mW,DIP-4,ST	1
25	IC01	IC-PWM CONTROLLER	IC-PWM CONTROLLER;255,DIP,8P,300MIL,PLAS	1
26	VA71,72	VARISTOR	560V,2500A,17.5x7.5mm,TP	2
27	R405,406	R-CARBON	330ohm,5%,1/8W,AA,TP,1.8x3.2mm	2
28	R104,105	R-CARBON	220OHM,5%,1/4W,AA,TP,2.4X6.4MM	2
29	R101	R-CARBON	470OHM,5%,1/4W,AA,TP,2.4X6.4MM	1
30	R206,501,502,601,604,606,902	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	7
31	R201,207,208,401,403,408,603,605,608	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	9
32	R910,911,912,913	R-CARBON	3.3KOHM,5%,1/8W,AA,TP,1.8X3.2MM	4
33	R102,103	R-CARBON	330KOHM,5%,1/4W,AA,TP,2.4X6.4MM	2
34	R106,901	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM	2
35	R607	R-CARBON	560OHM,5%,1/4W,AA,TP,2.4X6.4MM	1
36	R402	R-CARBON	6.8KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1
37	R602	R-CARBON(S)	1KOHM,5%,1/2W,AA,TP,2.4X6.4M	1
38	R202,203	R-METAL OXIDE(S)	51Kohm,5%,2W,AA,TP,4x12	2
39	R404,407	R-METAL	6.8Kohm,1%,1/8W,AA,TP,1.8x3.2m	2
40	C203,204,401	C-CERAMIC,MLC-AXIAL	10nF,+80-20%,25V,Y5V	3
41	C404,903	C-CERAMIC,MLC-AXIAL	1nF,10%,50V,Y5P,TP,1	2
42	C102,104,107,109,114,116,117,118,201, 202,402,403,501,901	C-CERAMIC,MLC-AXIAL	100nF,+80-20%,50V,Y5	14
43	C105	C-AL	1000uF,20%,25V,GP,TP,10x20,5	1
44	C601	C-AL	47uF,20%,50V,GP,TP,6.3x11,2.5	1
45	C108	C-AL	470uF,20%,25V,GP,TP,10x16,5	1
46	C101,110	C-AL	6.8uF,20%,450V,GP,TP,10x16mm,5	2
47	X501	RESONATOR-CERAMIC	4MHz,0.5%,TP,10.0x5.0x	1
48	F702	FUSE-RADIAL LEAD	250V,1A,TIME-LAG,-,8.5x	1
49	CN78	CONNECTOR-HEADER	1WALL,3P/5P,1R,3.96mm,S	1
50	CN71	CONNECTOR-HEADER	1WALL,3P/5P,1R,3.96mm,S	1
51	CN73	CONNECTOR-HEADER	1WALL,3P/5P,1R,3.96mm,S	1
52	CN91	CONNECTOR-HEADER	BOX,10P,1R,2.5mm,STRAIG	1
53	CN43	CONNECTOR-HEADER	BOX,3P,1R,2.5mm,STRAIGH	1
54	CN41	CONNECTOR-HEADER	BOX,4P,1R,2.5mm,STRAIGH	1
55	CN61	CONNECTOR-HEADER	BOX,6P,1R,2.5mm,STRAIGH	1
56	IC07	IC-MASK ROM	93LC56B,8BIT,-,DIP,8P,-,-,-	1
57	IC03	IC-RESET	KA7533,DIP,-,-,-,-,-	1
58	IC06	IC-DRIVE	KID65003AP,DIP,16P,STICK,TR-AR	2
59	L101	COIL CHOKE	5.0mH,-,8.0*11.0,-,-,PE-M10	1
60		WIRE-SO COPPER	PI0.6,SN,T,52MM,TAPING_WI	35
61		PCB-MAIN	PD-SH30ZC-00,FR-1,-,-,T1.6,W197	1

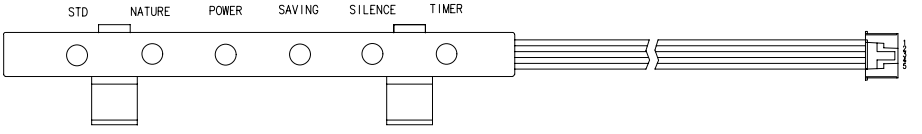
■ ASS'Y MODULE PCB : DB93-00926A



■ Parts List

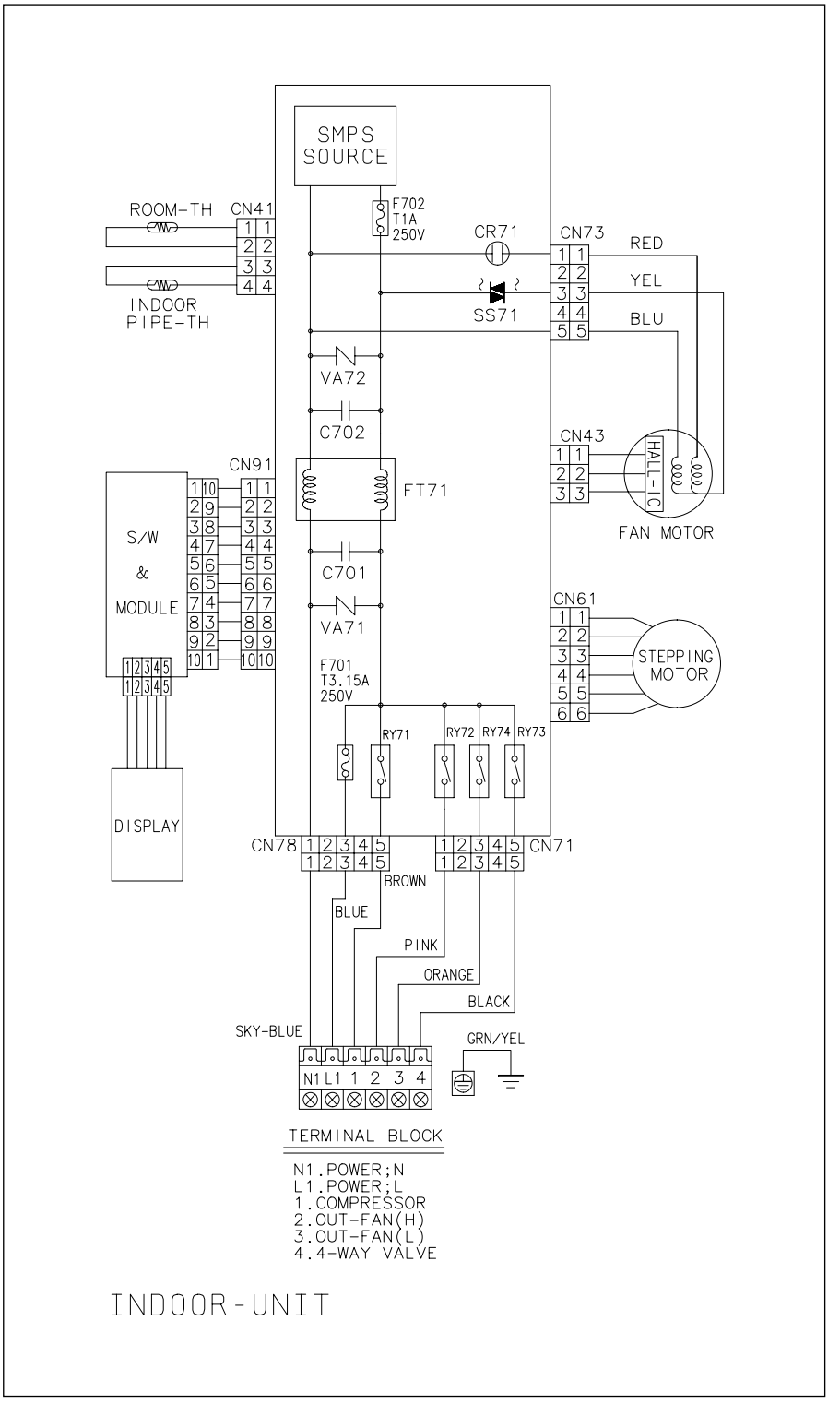
NO	Description	Specification	Q'TY
1	PCB-DISPLAY	FR-1 T1.6	1
2	MODULE REMCOON	FRP-4021H6	1
3	TACT SWITCH	KPT-1105A	1
4	C-CERAMIC	CA 0A 50V 102Z	1
5	C-CERAMIC	CA 0A 50V 104Z	1
6	DIODE SWITCHING	1N4148	1
7	R-CARBON	1/4W 470KΩ-J	3
8	JUMP-WIRE	10mm	1
9	CONNECTOR WAFER	SMAW200-5P(WHT)	1
10	CONNECTOR WAFER	SMAW200-10P(WHT)	1

■ ASS'Y CENTER DISPLAY : DB93-00860A

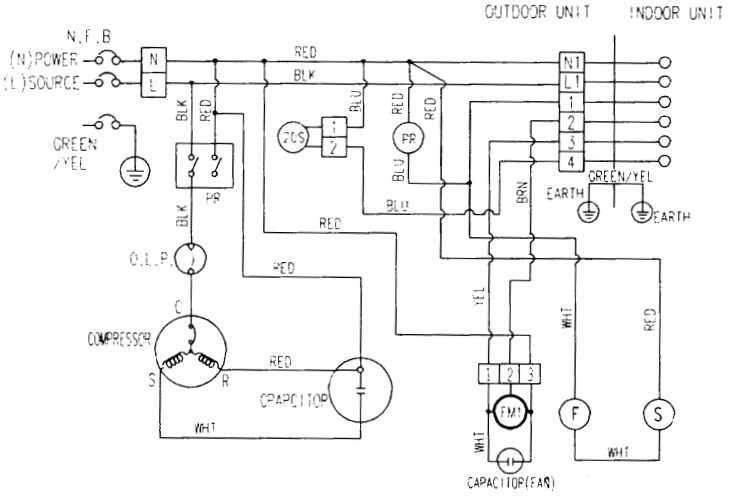


9. Wiring Diagrams

9-1 Indoor Unit



■ SH24AC5(6)X, SH18AC9(0)X

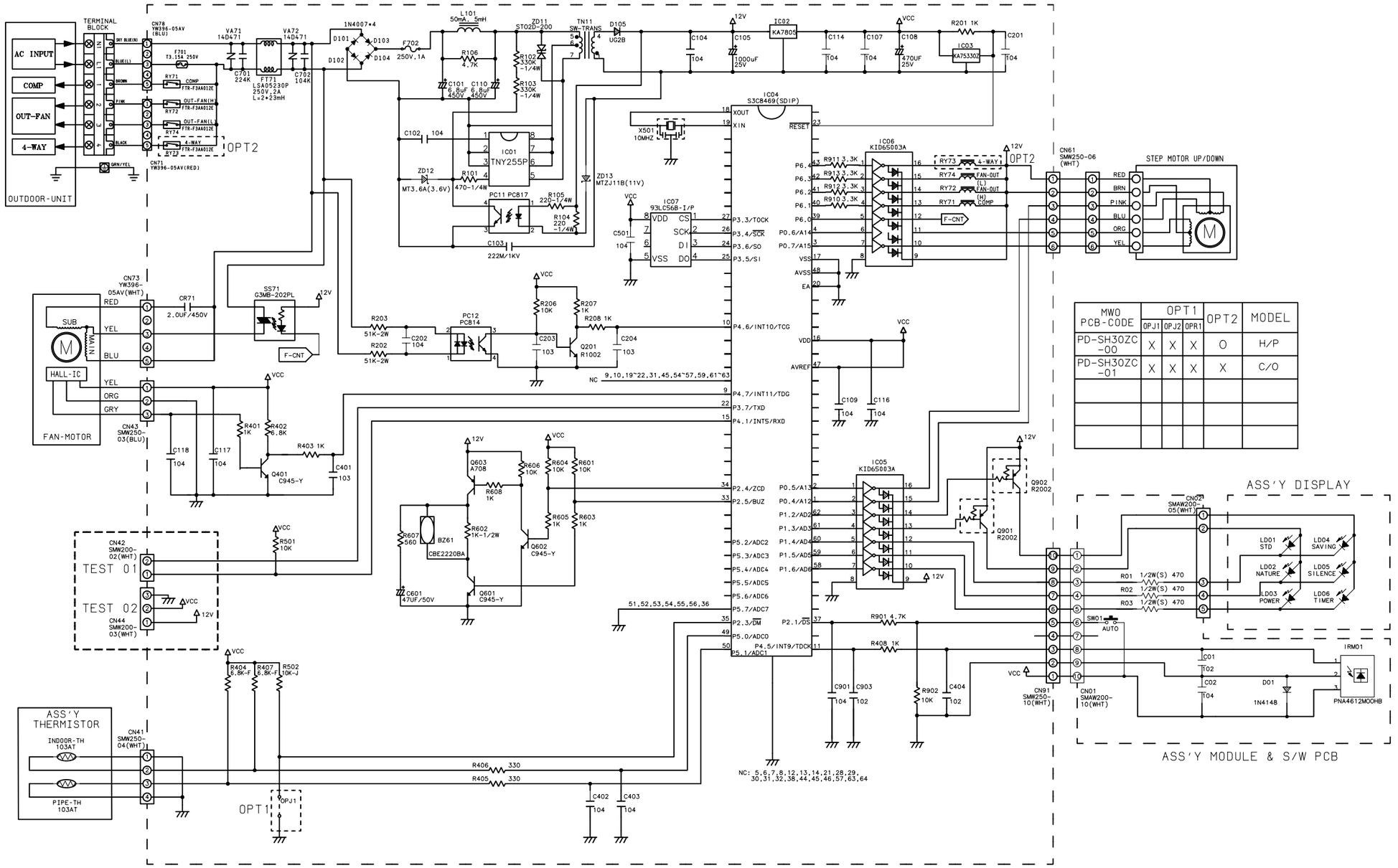


MARK	NAME	MARK	NAME
PR	POWER-RELAY	T1 1, 2	TERMINAL BLOCK
20S	SOLENOID COIL	CH	
C1	CAPACITOR	FM1	FAN MOTOR
F	FUSE(2A, 250V~)	S	SPARK KILLER

MEMO

10. Schematic Diagrams

10-1 Indoor Unit



MWO PCB-CODE	OPT1			OPT2	MODEL
	OPJ1	OPJ2	OPR1		
PD-SH30ZC-00	X	X	X	O	H/P
PD-SH30ZC-01	X	X	X	X	C/O

MEMO

UPDATE LOG SHEET

Application date	Page	Part#	Note(Cause & Solution)	S/Bulletin#

Use this page to keep any special servicing information. (Service Bulletin, etc.)
If only parts number changes, Just change parts number directly on parts list.
And if you need more information, please see the service website.

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